University of Nevada, Reno

Student Social Capital and Enriching Educational Experiences in Higher Education

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in
Educational Leadership

By

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Abstract

The purpose of this dissertation is to explore the effect of the enriching educational experience on student social capital. A social capital index was created based on Putnam's research (2000); social capital categories were drawn on Spellerberg's research (2001). Data were collected at a single land-grant western U.S. university by the National Survey of Student Engagement (NSSE). The population consisted of 714 seniors. The analysis used the ANOVA and ordinary least squares regression. Fourteen equations estimated the differences between student social capital of the student participants and non-participants in the enriching educational experience (EEE).

Social capital and six sub-groups of social capital (civic, trust, volunteering, giving, participation, meeting obligations) were the dependent variables. Enriching educational experiences (internship, community service, learning community, research with faculty, foreign language, studies abroad, independent study, and senior culminating experience) were the independent variables. Control variables were selected student attributes, e.g., fraternity or sorority membership, student athlete, parental education (fathers), gender, race and ethnicity, self-reported grades, and program of study. The findings showed that 15% to 20% of the difference in student social capital came from student participation in the EEE regardless of the type of social capital. The control variables did not change the basic model. The most significant experience was the learning community for seven of the eight types of social capital, followed by community service, and the internship. This research contributes to the literature by providing important results relevant to higher education, the student and the community.

Dedication

I dedicate this work to my mother, *Patricia Marie Henry Griswold Fox*, because of her fascination with Latin, language, and her belief in mankind's relationship with horses.

I dedicate this work to my father, *Lyman William Griswold*, for his love of flying, community engagement, and entrepreneurial skills.

I dedicate this work to my grandmother, *Marie Francesca Planet Henry*, a Lake Tahoe Pioneer, whose stories about surviving long Tahoe winters are the legends of community engagement.

The world is a better place from their presence

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Chapter One: Introduction

This study addresses student social capital in higher education. Social scientists utilize social capital theory to investigate interpersonal networks in the workplace (Requena, 2003), economic development (Knack & Keefer, 1997), crime (Rosenfeld, Messner, & Baumer, 2001), and dropout rates in education (Coleman, 1988). Social capital generates through interpersonal actions between actors (Coleman, 1988). Coleman defined these concepts while formulating the theoretical relationship between social capital and education particularly secondary education. Utilizing the High School and Beyond data collection, Coleman identified social capital as a useful concept in explaining the root causes of high school dropout rates (Coleman, 1988). Putnam's seminal book creating a social capital index stimulated a new area of research quantifying social capital (Putnam, 2000). Research into social capital evaluates people's relationships. However, publications researching social capital and the enriching educational experience in colleges and universities are limited. This study uses a more targeted approach to expand social capital research from the community environment into the higher education environment based on Putnam's broader focus of community social capital.

Background of the Study

Putnam (2000) defined social capital through behavior patterns involving personal interactions. These include civic engagement, trust, volunteering, giving, participation, and meeting obligations of family and friends. Putnam used marketing databases from the Roper Survey and the Doyle Dane Bembach (DDB) Needham marketing agency for survey data from 1970 to 2000. Putnam's research identified the existence of declining

values of social capital that reduced people's participation in their community (Putnam, 2000).

Social capital generated through education embodies knowledge, research skills, and understanding (Becker, 1976; McMahon, 2010; Brimley, Verstegen, & Garfield, 2012). Cultural capital flows from the intergenerational transference of knowledge (Bourdieu, 1986); social capital flows from interpersonal relationships (Putnam, 1993). Examining the relationship between education and social capital acknowledges the social benefit from learning, for society as a whole, as measured by its effects on national productivity (Becker, 1965). This education and social capital relationship builds from the contribution made by the family through the intergenerational transfer of knowledge, habits, and skills (Bourdieu, 1986; Coleman 1988; Goldin & Katz, 1999).

Social capital generation occurs through interactions at multiple levels; first, between individuals, families, communities; second, between counties, states, and countries; and third, the organizational level. Graphically, the charts are displayed in Appendix B (Schoo, Stagnitti, Mercer, & Dunbar, 2005; Sobel, 2002). There are similar networks in different environments (Goldin & Katz, 1998). The utilization of social capital in the academic community occurs through networking and enables student persistence towards successful program completion (Wells, 2008).

The social-economic structure of the family background influences student preparation for college (Cabrera & La Nasa, 2000; Choy, Horn, Nunez & Chen, 2000; Flint, 1992; Hossler & Stage, 1992; Keller & McKewon, 1984; Somers & Cofer, 2001). Parents with high social capital accumulate more financial resources to pay for college and increased postsecondary attendance (Plank & Jordan, 2001). Students pursue higher

education as preparation for success in today's labor market (Baum & Payea, 2004; Kane & Rouse, 1999; Leslie & Brinkman, 1988; Pascarella & Terenzini, 2005; Paulsen, 1998). Social and cultural capitals affect student persistence towards graduation (Wells, 2008, p. 42). Ability-to-pay determines the likeliness of successful college graduation (Gladieux & Perna, 2005). The successful use of student engagement facilitates successful problem solving techniques and program completion (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006, p. 76).

For a student, attending a post-secondary educational system is both a private and a public good (Bourdieu, 1986). Bourdieu theorized that the private good is the right to occupy a singular place in academia and that the public good is an institutionalized system reproducing educational qualifications. Economic capital is the foundation of a functioning society while other forms of capital, e.g., cultural and social capital, interpret the distribution of non-physical capabilities unaddressed by economic theory (Bourdieu, 1986).

Human capital is the knowledge, skills and abilities people accumulate through education and employment (McMahon, 2009). McMahon emphasized that human capital benefits accrued to college graduates through increased earnings, perceived happiness, economic growth, and social outcomes like democratization, increased political stability, reduced crime rates, and reduced pollution. Cultural capital, as taught through social mores and tenets of behavior, provides guidelines for living life (Bourdieu, 1986). Social capital is a more complex concept because it involves layered relationships between the individual, family, organization, community, county, and national levels (Putnam, 2000; Schoo, 2005).

George Kuh designed the National Survey of Student Engagement, known as the NSSE (Kuh, 2001, 2005, 2007). The NSSE was based on the research conducted by Robert Pace (1979) on student effort and perception. Pace concluded that increased student engagement resulted in greater learning gains. Pace designed the College Student Experiences Questionnaire (CSEQ) for both cross-sectional and longitudinal research. Kuh's (2001) research reported that student involvement with educationally purposeful activities tends to result in desired college outcomes, such as graduation, better grades, and greater persistence. As a result of Kuh's research, the National Survey of Student Engagement (NSSE) was designed to ask questions pertinent to student engagement, demographics and program completion. Through analyzing student behaviors and attitudes by using social capital categories, it is possible to estimate differences in student accumulation through participation in the enriching educational experience. Appendix A contains a copy of the 2009 NSSE instrument.

Many of the questions utilized in the survey stemmed were similar to questions used in Putnam's previous research into social capital (Putnam, 2000). The results from the NSSE showed a statistically significant effect of persistence from student engagement resulting in success during a students' first year (Kuh, 2007). In turn, student engagement from the first year had a statistically significant effect on persistence in the second year. The effects are even greater for students with marginal academic achievements prior to college and students of color as compared with Caucasian students (Kuh, 2007). Research has shown that the enriching educational experience and student engagement increased successful program completion (Kuh, Kinzie, Buckley, Bridges, & Hayek; Wells, 2008).

Statement of the Problem

The results from the National Association of Colleges and Employers (NACE) survey reported that professionally oriented internships better prepare students for employment opportunities. Social capital theory states that people with social capital do better in most environments through using networking and principles of engagement with other people (Putnam, 2000). As part of the higher education program, students obtain social capital by participating in an assortment of classroom and extracurricular activities (Kuh, 2007). The NACE survey findings state that the internship experience has mixed results for students (NACE, 2011). As the internship experience is part of an enriching educational experience, these results point to the problem being reserached which is the relationship between the enriching educational experience and the students' accumulation of social capital. Social capital theory suggests students with social capital skills are better prepared for life after college. However, to date there is little research in this area between student social capital accumulation in higher education and a student participating in the enriching educational experience.

Purpose of the Study

The purpose of the research is to compare the effect of student participation in the enriching educational experience on the accumulation of student social capital. Independent variables of the enriching educational experience, Greek membership, student-athlete status, gender, race-ethnicity, self-reported grades, self-reported field of study, and parental educational background are controls for student social capital.

Research Hypotheses

To address this topic, the following three research hypotheses guide this study. The dependent measures of student social capital, measured through the Putnam's (2000) and Spellerberg's (2001) social capital categories, were compared between participants and non-participants of the enriching educational experience on the difference in student social capital. Differences, if they exist, were measured through the linear regression testing procedures detailed in Chapter Three. The dependent social capital variable is as an index built from twenty-nine questions from the NSSE. Six sub-group indices were constructed from the same 29 questions after sorting by category. Testing for significant differences used the enriching educational experience variable and various student attributes. The following null hypotheses were examined:

1. Social capital growth

    $H0_1$ At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital between participants and non-participants in an enriching educational experience.

2. Social capital growth by category

    $H0_2$ At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital by type (civic, trust, volunteering, giving, participation, meeting obligations) between participants and non-participants in an enriching educational experience.

3. Social capital growth by student characteristics

$H0_3$ At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital by demographics (Greek membership, parental educational background, race, ethnicity, gender, student-athlete status, program of study, grade point average) between participants and non-participants in an enriching educational experience.

These three null hypotheses were investigated using quantitative methodology and the results may indicate if there were significant differences in student social capital from a student participating in the enriching educational experience.

Theoretical Framework

After evaluating the social capital research for quantitative measurements (Bourdieu, 1986; Coleman, 1994; Portes, 1998; Temple, 2000; Willms, 2001; Woolcock, 1998), it appears that the NSSE questions can be evaluated in terms of social capital theory as applied to a college or university, when viewing the college or university as a community and a society (Kuh, 2001).

Research revealed common categories of trust, civic, giving, volunteering, participation, and meeting obligations as variables essential to supporting confidence in the academic community (Gradone, 1997; Mertz, 2006; Deo, 2009). These categories may be used as proxies for control variables in the absence of pre-existing social capital constructs (Myers-Lipton, 1996; Shadish, Cook, & Campbell, 2002). D'Agostino's (2010) research findings supported that a student's completion of a service-learning program increased their social capital accumulation, trust and networking indices. Pertinent to this study was Putnam's research generating new and investigative

approaches involving multiple sectors of the economy, generating over 20,000 citations in Google scholar, denoting that Putnam has been widely cited. The importance of Putnam's work was the fundamental shift from theoretical discussions of social capital, e.g., Pierre Bourdieu and James Coleman, into quantitative studies.

The National Survey of Student Engagement (NSSE) questions are grouped into five benchmarks describing student engagement. Referencing Putnam's (2000) conclusions that declining social capital was correlated to declining interactions in a community, students participating in the enriching educational experience may align conceptually to social capital. Theoretically, social capital indices built from the NSSE questions may be different among students through their participation in one of the following eight experiences:

- practicum, internship, co-op experience, clinical assignment, field experience
- community service or volunteer work
- participation in a learning community or some other formal program where groups of students take two or more classes together
- work on a research project with a faculty member outside of course or program requirements
- foreign language coursework
- study abroad
- independent study or self-designed major
- a culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)

Significance of the Study

The findings from this study will contribute to program design enabling student participation while completing a rigorous and challenging learning program; (b) will make suggestions for program evaluators pertinent to student interactions and peer relationships, (c) will provide guidelines for mentoring and encouraging the development of student social capital as a tool for successful program completion, (d) will contribute to the research literature in undergraduate social capital, and (e) would expand the Putnam model into higher education, evaluating the enriching educational experience (practicum and/or internship) as preparation for students' entry into the larger community. The results may be of interest to faculty, especially when students face hurdles and falter in their persistence toward completion (NSSE, 2010). Finally, the research will help program planners to better prepare students and academic partnerships involved in program planning for success in the enriching educational experience.

Limitations

This study was limited to a western land grant research university participating in the NSSE. Results of this study had no comparisons and were influenced by the number of students participating in the survey. The study acknowledges that social capital informed the learning process and that the learning process informed social capital. The NSSE survey administration involved a self-selecting group of students which could indicate high levels of social capital embedded into these particular students.

The limitations in this study were determined by a desire to gain a better understanding of the entire relationship that existed between students and the accumulation of social capital in higher education. This relationship involves the

institution, faculty, fellow students, and the community outside the institution of higher education. Institutions of higher education are an integral part of their community and to explore this multilevel structure, the researcher sought data from a single institution. In order to obtain the perspectives of students, the researcher sought students who participated in the National Survey of Student Engagement (NSSE) at a western land-grant university. The use of one institution of higher education limits generalizability yet may inform other institutions of similar size, type, and structure.

A second limitation of the research was the use of exiting year students to frame the development of student social capital. While the National Survey of Student Engagement administers the survey annually, the survey is administered to students every four years at this western land-grant university. Social capital is not specifically mentioned in the NSSE; therefore it is constructed from NSSE questions.

This study included the following assumptions: (a) the students responded to the NSSE survey accurately and indicated their opinions on their secondary education; (b) the student respondents understood the vocabulary and concepts associated with higher education; (c) the data collected measured the knowledge, skills, and perceptions of the student engagement with higher education; and (d) the interpretation of the data accurately reflected the perceptions of the student respondents (Lunenburg & Barrett, 2000, p.135). To help frame the discussion, certain terms have specific meanings and the following list is a summary of the most frequently used terms in this research.

Definition of Terms

Several terms are used throughout the study. A succinct definition of these terms is included at this point.

ESSC – Exiting or senior social capital and sub-group categories

- ESSC = overall or cumulative exiting student or senior social capital
- $ESSC_1$ = exiting student or senior civic social capital
- $ESSC_2$ = exiting student or senior trust social capital
- $ESSC_3$ = exiting student or senior volunteering social capital
- $ESSC_4$ = exiting student or senior giving social capital
- $ESSC_5$ = exiting student or senior participation social capital (more formal)
- $ESSC_6$ = exiting student or senior friends, family, and meeting obligations (informal)

Enriching Educational Experience (EEE) – Classes with a significant workload in a community workplace, not in the classroom, through which students apply learned skills and successfully completed projects developed by people outside of their program of study. This is one of the five benchmarks of effective educational practices defined from questions in the National Survey of Student Engagement by the administrators of the NSSE. These eight enriching educational experiences are:

- EEE_1 means practicum, internship, co-op experience, clinical assignment, field experience
- EEE_2 means community service or volunteer work
- EEE_3 means participation in a learning community or some other formal program where groups of students take two or more classes together

- EEE_4 means work on a research project with a faculty member outside of course or program requirements
- EEE_5 means foreign language coursework
- EEE_6 means study abroad
- EEE_7 means independent study or self-designed major
- EEE_8 means a culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)

Exiting Students – the selected senior students of the 2009 NSSE student cohort.

Human capital – knowledge, skills, and abilities or competencies attributable to the creation of personal, social, and economic well-being (OECD, 2004, p 17)

National Survey of Student Engagement (NSSE) – a national survey conducted by the Center for Postsecondary Research at the University of Indiana in over 800 schools.

Non-participants – students who checked 'do not plan to do' or 'have not decided' to participate in an enriching educational experience (question 7) on the National Survey of Student Engagement. There are eight enriching educational experiences. The phrase is defined to mean that the student did not participate in any of the eight experiences.

Participants – students who checked 'done' or 'plan to do' to do an enriching educational experience (question 7) on the National Survey of Student Engagement. The student may participate or participated in one or more of the eight enriching educational experiences.

Program of Study – NSSE summary categories: arts and humanities, biological science, business, education, engineering, physical sciences, professional, social sciences, and other.

Social Capital Index – An average, by student, of twenty-nine selected questions from the NSSE concerning student social behavior with a basis in one of the six sub-groups: civic, trust, volunteering, participation, giving, meeting obligations of family and friends. Specifically for this study, social capital is viewed in the context of education and the provision of mutual aid and support resulting in the informal means of informational exchange (Cullen & Whiteford, 2001).

Social Capital Civic Index – Civic participation in the community, e.g., voting, use concepts about attitudes toward government and other societal institutions. The index is an average of four questions from the NSSE.

Social Capital Giving Index – Measures of social service activity or donating time, money, blood, and information. The index is an average of four questions from the NSSE.

Social Capital Meeting Obligations of Family and Friends Index – showing responsibility to family and friends. The index is an average of seven questions from the NSSE.

Social Capital Participation Index – social interactions people have with others through formal organizations. The index is an average of six questions from the NSSE.

Social Capital Trust Index – believing and supporting the give and take of relationships whether at the individual, family, or community level. The index is an average of five questions from the NSSE.

Social Capital Volunteer Index – giving time away from personal endeavors to help others without expectation of reward. The index is an average of four questions from the NSSE.

Student Attributes:

- SA_1 = fraternity or sorority membership (*fratsoro*)
- SA_2 = student athlete status (*athlete*)
- SA_3 = parental education (father's) (*educ*)
- SA_4 = gender (*gender*)
- SA_5 = race and ethnicity (*ethnicity*)
- SA_6 = self-reported grades (*grades*)
- SA_7 = program of study (*program*)

Summary

This chapter provides an introduction to the study including a discussion of principles of social capital and students in higher education. The purpose of this study is to determine the difference in student social capital due to students participating in the enriching educational experience. Specifically, does the enriching educational experience increase student social capital and better prepare the student for life after graduation? This study addresses this issue. The significance of this study and limitations were addressed in this chapter.

This research study is presented in five chapters. Chapter one includes the background of the study, statement of the problem, purpose of the study, research hypotheses, theoretical framework, significance of the study, limitations, and definition of terms.

Chapter two presents a review of the literature which includes background and history, social capital and human capital, roots of social capital, national testing and surveys, national organizations, National Survey of Student Engagement, measuring social capital, and summary.

Chapter three describes the study design, population and sample, instrument, variables, exploratory procedures, threats to validity, the procedure, data analysis, interpreting results, and summary.

Chapter four presents the study's findings including hypothesis, population, data analysis, and summary.

Chapter five provides a summary of the study, a discussion of hypotheses and findings, implications of the research, and recommendations for further research.

Chapter Two: Literature Review

This chapter provides a review of the literature discussing the roots, growth, and studies of the theory of social capital. In doing so, the chapter reviews discussions of social capital and education which are presented in the following order: (a) background and history, (b) social capital and human capital; (c) roots of social capital; (d) national testing and surveys, (e) national organizations, (f) National Survey of Student Engagement, (g) measuring social capital; and summary. In these contexts, the research project adds to the existing research in higher education about social capital and participation in the enriching educational experience.

Background and History

Human capital, generated through years of education, embodies knowledge, skills, and understanding (Becker, 1965; 1976). A nation's citizenry benefits from the investment in higher education with better knowledge, skills, abilities, health, and self-esteem (Becker, 1976; Bourdieu, 1986; McMahon, 2009). Investing in human capital builds a better workforce required for competing successfully in the modern global marketplace (McMahon, 2009). For a student, attending a post-secondary educational system is both a private and a public good (Bourdieu, 1986). Bourdieu theorized that the private good is the right to occupy a place in academia and that the public good is an institutionalized system of entry and duplication of educational qualifications. If economic capital is the foundation of a functioning society, then other forms of capital, e.g., cultural and social capital, distribute the non-physical capabilities not addressed by economic theory (Bourdieu, 1986).

Human capital development in higher education builds pathways for college

graduates to increase earnings, happiness, and promote economic growth with social outcomes such as democratization, increased political stability, reduced crime rates, and reduced pollution (McMahon, 2009). These investments have been increasing and changing in the last one-hundred years in the United States (Goldin & Katz, 1999). High demand jobs have requirements which focus on students with more complex and targeted vocational skills. These jobs still require the advanced skills developed through critical thinking, which students acquire while pursuing higher education credentials (Stevens, Armstrong, & Arum, 2008).

Human capital is defined through years of education by many people and codified by the Organization for Economic Cooperation and Development (OECD). OECD research defined an expanded version of human capital of knowledge, skills, and abilities or competencies to be attributable to the creation of personal, social, and economic well-being (OECD, 2003; 2011). The United Nations defined the American educational system as the critical support of the success of the American culture and society because it is essentially supported by the American political ideology. "The success of the American system of education was politically driven to integrate migrants into American society, develop American citizenship, and ensure the success of a democratic society" (UNESCO, 2004, p. 48).

A well-educated and well-trained population is essential for the social and economic well-being of countries. Education plays a key role in providing individuals with the knowledge, skills and competencies needed to participate effectively in society and educational attainment is a commonly used proxy for the stock of "human capital", i.e. the skills available in the population and the labor force. The definition of human

capital from the OECD refers to:

> Educational attainment refers to the highest level of education completed by each person, shown as a percentage of all persons in that age group. Tertiary education includes both tertiary-type "A programmes", which are largely theoretically-based and designed to provide qualifications for entry to advanced research programmes and professions with high skill requirements; and tertiary-type "B programmes", which are more occupationally-oriented and lead to direct labour market access. Upper secondary education typically follows completion of lower secondary schooling. Lower secondary education completes provision of basic education, usually in a more subject-oriented way and with more specialised teachers (p. 119).

McMahon researched human capital and defined external social benefits as integral to human capital. The investment in education usually resulted in increased earnings and employment benefits, a productive use of time at home, in the community, and on the job. Additionally, non-market benefits included better health, a longer life span of 4.5 years after attaining a bachelor's degree, improving child health and cognitive development, and increased happiness (McMahon, 2009). Additional benefits included the civic contributions to democratic institutions, human rights, political stability, lower state welfare costs, lower health costs, lower public incarceration costs, increased contributions to social capital, and the generation of new ideas. Economically, the increased flow of new ideas sets the stage for future rounds of economic growth (McMahon 2010). Research by McMahon (2009) summarized Kuh's five benchmarks as external social benefits essential to human capital.

Quantifying human capital beyond counting the years of education required some innovative modeling. One model examined the investment in higher education into five benchmarks addressing cognitive, social, and critical thinking skills and interactions (Kuh, 2001). Supporting this education and engagement association is research about service-learning (D'Agostino, 2010). Service learning research continued the promotion of service learning begun in the early 1990s as a tool for student engagement (Barber & Battistoni, 1993; Baxter, 2008; Corporation for National and Community Service, 2012; Putnam, 2000).

Surveys are one way of measuring the benefits from higher education. Most schools survey alumni tracking post-graduation status. One survey prior to graduation is the National Survey of Student Engagement (NSSE). A web link to the NSSE is sent to students. This survey measures student engagement each year. The survey question design tracks attitudes and are grouped into five benchmarks: one, academic challenge measured the quality of student work; two, collaborative learning assessment measured the practical application of student group work; three, student interaction with faculty measured building trust; four, the enrichment of the educational experience measured building networking and personal interaction skills at multiple levels, e.g., family, education, and professional; and five, supportive campus environment measured helping students achieve their goals. The sign of a completed degree program signals a student's ability to coordinate and manage multiple priorities while successfully completing coursework (Kuh, Kinzie, Schuh, & Whitt, 2005).

The investment in human capital with its corresponding business benefits is evident through the higher earnings associated with the valuable skills gained from higher

education such as critical thinking and problem solving. There is less unemployment among the experienced college-degree workers and also for the newly graduated students as "overall unemployment rate for recent bachelor's degree recipients is 8.9%, compared with 22.9% for recent high-school graduates and 31.5% for current high-school dropouts" (Supiano, 2012, para. 6).

McMahon's research (2009) explored the social rates of the return on the investment costs in human capital through extrapolating a dollar total from institutional costs, public cost of financial aid and the foregone earnings cost of attending higher education. The perspective cost of job earnings is one-third of the additional benefits of human capital from obtaining either an associate or baccalaureate degree. From these additional benefits, couples used these additional skills almost three-fourths of the time when organizing the household or organizing in the community (McMahon, 2010). The implications across academic fields are tougher to determine quantitatively, for example, if filed engineering patents is a quantified approach emphasizing success in research and considered the gold standard, then the contributions of other fields are more difficult to ascertain. The difficulty occurs because defining a contribution from well-functioning civic institutions such as, trade, improved health, better child cognitive development, and crime reduction are not easily quantifiable and are considered indirect contributions to positive growth (McMahon, 2010).

Current research into social capital separates it from human capital. Human capital has been measurable through years of education and social capital has been viewed as an intangible benefit from education. Notable about McMahon's research model was the association of monetary values to the social benefits of education

(McMahon 2009). Three views of social capital were relevant to McMahon's study. The first view (Moomaw, 2002) estimated the investment in education as a highly significant determinant of per capita real growth when viewed as a percentage of gross state product (McMahon, 2009). The next point (Jamison, 2007) found a positive and highly significant association of educational attainment to the level of per capita income. The total contribution of learning from both quantity and quality contributed to the level of per capita income and to the growth of per capita income and is substantial (McMahon, 2009). A third point hypothesized that over-education may make the investment in human capital unproductive (Nie, Junn, & Stehlik-Barry, 1996).

Connections between higher education and social capital were measured in terms of trust, civic duty, and social cohesion enhanced through years of education and modified by lower inequality, lower crime, democratization, and human rights (Preston & Sabates, 2005). Correlations between education and measures of social capital, such as trust, formal group membership and participation, and community service have large effects on happiness when viewed in terms of civic government (Helliwell & Putnam, 1999; 2007). McMahon presented happiness as a social benefit associated with building social solidarity with other people (McMahon, 2009). Recent studies highlighted that students from less socially developed familial backgrounds gain more than students from more socially developed backgrounds (Wells, 2008).

Initially Bourdieu's (1986; 2001) contribution to sociology was framing social capital within the family and extending the integration of the family into the community (Bourdieu, 1986). With Bourdieu defining social capital as part of the resources within social networks, then gaining access to these networks depended upon knowledge of

access pathways. Students from families with highly developed social backgrounds or parents with post-secondary education have existing information from being embedded into the social networks in which their families live. Research explored students without this background measureing the benefits of higher education as part of forming social capital (Horvat, Weininger, & Lareau, 2003). Studies at the postsecondary level positively associated social capital with the valuable resources accessed through social networks (Pascarella & Terenzini, 2005). Studies examining the reasons for student success, student persistence, and student retention showed exponential growth from higher education under the umbrella of college impact studies (Pascarella & Terenzini, 2005).

However, looking at social capital together with reasons for student success, student persistence, and graduation rates are a relatively new research interest in higher education. Past research did not use the social capital expression per se but other terms, such as sense of belonging (Hurtado & Carter, 1997), contact with faculty, and contact with other students (Rice & Alford, 1989). Peers provided academic engagement through interactions outside of classes with corresponding gains of student success (Astin, 1993). Extracurricular activities, service groups, fraternal groups, intramural teams were associated with developing career-relevant skills (Pascarella & Terenzini, 2005). Out-of-class interaction with faculty supported students in their educational applications, intellectual efforts, and targeting career choices (Kuh & Hu, 2001); and showed possible opportunities in teaching and research (Astin, 1993; Cole & Barber, 2003). Social capital functioning at the post-secondary level facilitated the use of resources and information in

social networks (Lin, 1999) and during the job search process (Bian, 1997; De Graff & Flap, 1988; Lin, Ensel & Vaugh, 1981; Marsden & Hulbert, 1988; Wegener, 1991).

Social Capital and Human Capital

Social capital enhances a student's ability to communicate, network, and be a more productive member at all levels of society (Helliwell, 2005; Kuh, et al., 2007; Putnam, 2000) and happiness is a social benefit associated with building social solidarity with other people (McMahon, 2009). These actions accumulate social capital and research points to an increase in satisfaction above and beyond the effect of income (Helliwell, 2005; McMahon, 2009; Milligan, Moretti, & Oreopoulos, 2004). Three studies evaluated the effectiveness of education and social capital in terms of relative effects, absolute effects, and cumulative effects based on the definition of an average education, whether at the high school level or post-secondary level. The studies were Gesthuizen, van der Meer and Scheepers (2008), Helliwell and Putnam (2007), Nie, Junn, and Stehlik-Barry (1996).

Valuation of Social and Economic Benefits of Human Capital

Kanev (2005) recognized that institutions of higher education were not just factories for human capital but also places where human relationships develop. Colleges and universities establish settings in which social norms, values, and networks are nourished. Kanev theorized that social capital was not just a byproduct but also a resource in the process of education; faculty and administration of any given institution bracket student behavior through developing systematic processes.

Based on economic theory, the self-interests of institutions of higher education have, in the past, been submerged in a more altruistic nature. Competition and incentives

alone did not inspire the individuals in their organization as historically did the commitment to truth, duty, and justice helping to achieve better results. For institutions, the efficacy of higher education was not just personal consumption but was also built on the well-being of others. In this manner, the unique qualifications of faculty and staff of higher education institutions help motivate their students grow intellectually and socially (Penuel, Riel, Krause, & Frank, 2009).

Social Benefits of Higher Education

The McMahon research determining the relationships between an intangible benefit and a tangible monetary value resulted from a process which standardized 34 studies and variables for the social benefits of education concerning democratization, human rights, political stability, poverty reduction, life expectancy, lower crime rates, lower public costs, forestation, clean water, clean air, and economic development. Data were collected from 28 OECD countries from 1960 to 2005 analyzing the growth effects of higher and secondary education. If production or output was a function of physical and human capital, then the unexplained residual effects may be based on the education externalities of human capital or social capital. These externalities reflect the influence of non-physical factors relating to output or production. McMahon's results were from regressing variables from the studies looking for intangible benefits and a tangible monetary value. The results were highly significant in the positive correlation of secondary and higher education enrollment rates to these benefits and values (McMahon, 2009).

The McMahon analysis estimated the contribution of advanced degrees in terms of non-market social benefits and income values for a degree. Values, contributing to

non-market social benefits, are democracy ($1,830), human rights ($2,865), political stability ($5,813), life expectancy ($2,308), lower crime rates ($5,647), lower public health care costs ($6,813), increased tax receipts (0) counted in income, environmental benefits ($5,609), dissemination of research and development knowledge (a percentage of each previously listed item). A bachelor's degree was valued at $27,726. An estimated benefit of non-market private benefits and net earnings benefits generated was a total of $38,020. McMahan concluded there was an estimated 29% value to social benefits from higher education. When combined with market benefits, the total reached 52% of gross earnings (McMahon, 2009).

McMahon's research focused on deducing the social rate of return on education. The social rate of return on education was 59% which was greater than the social benefit return of 52%. The balance of 7% was due to the value of the direct non-market social benefits resulting from a bachelor's degree that were enjoyed by others in the community or future generations. This component could be converted to a rate of return on associate and bachelor's degrees (McMahon, 2009). McMahon's research which assigned monetary values to the accrued social benefits of higher education gave concrete values to abstract concepts. McMahon estimated his "value of the health benefits at 98% of earnings and Grossman's (2006) independent estimate of about 100% of earnings are remarkably close" (McMahon, 2009, p. 166).

Utilization of social benefits in the community through civic duty, giving, volunteering, formal organizational membership, trusting the legal framework, and meeting obligations improved the work environment and community through training and skills. These actions were similar to the social capital lens as developed by Putnam

(2000). As Putnam explored the effect of education by state, McMahon addressed the importance of the work environment in any given state in terms of income. States investing in advanced degrees should have appropriate work environments to retain graduates. The investment in higher degrees, academic research, and support staff should be balanced with employment opportunities. These investments build real economic growth and development over longer periods of time (McMahon, 2009).

McMahon addressed the need for changing higher education policies using the human capital lens. Identifying non-market benefits may point to an underinvestment in higher education. A lack of understanding by the public about non-market benefits and the associated increased income from obtaining a college degree impacts funding streams in higher education. Until the public understands that underinvestment means a reduction of community benefits, the income disparity between a high school and college graduate appears to remain far enough apart that an employment situation exists where college graduates leave the area for more lucrative employment (brain drain) elsewhere. McMahon writes, "52% of the cost of higher education should be borne by the state based on institutional costs and student foregone earnings with the student paying 48% if economic efficiency is to be achieved" (McMahon, 2009, p. 293).

The cost of maintaining institutions of higher learning is continually scrutinized by state legislators concerned about public budgeting. In order to demonstrate the 52% to 48% funding approach, there must be further efforts expended to rationalize and promote appropriate budgeting processes. The point of fulcrum is the balancing of assets and revenues between government, policy and ethics. McMahon estimated the social benefit

externalities need to be defined as part of the total investment in higher education needing public financing to achieve economic efficiency.

Economic efficiency and equity are the basic ideas of McMahon's work. Analyzing the costs of higher education evaluating internal efficiency is also production efficiency. Frequently forgotten in the discussion is external efficiency or the association between higher education and the needs of the community and society. Market failure is the result when insufficient information exchange occurs between higher education administration and the general population who supports reducing financial support. This loss of financial funding increases the financial commitment on the student, referred as privatization. McMahon finds that the evidence points to a significant risk and loss of higher education's service to the public good due to underinvestment by government.

McMahon concluded "evidence suggests that the new technology created by investing in research and development and embodied in human capital through higher education is highly effective and commands a premium on the job market as a result" (McMahon, 2009, p. 115). The evidence suggests that using technology to develop human capital diffuses technological skills resulting in increased economic growth (McMahon, 2009).

Social Capital in Higher Education Extraction from Human Capital

As for social capital, McMahon (2009) writes about the lack of existing research related to market returns:

> Education is positively correlated with factors that contribute to social capital such as trust, social participation in clubs and equality (Preston & Sabates, 2003). But the existing basic research is inadequate to be able to estimate the monetary

> value of any contribution of higher education to a family-of-four's income above $80,000 specifically for happiness that also contributed to social capital. There is a large amount of research over many years on the relationship of higher education to "subjective well-being" as summarized by Pascarella and Terenzini (2007) but it normally does not control for income. As a result, the increase of happiness with higher education is largely due to higher incomes. It would be necessary to reanalyze Helliwell's (2005) data to see what the effect of higher education on happiness is for a family-of-four with an income above $80,000, and to see what the indirect effects are through higher education's effects through choice of spouse and lower unemployment and divorce rates. The positive effect of higher education on social capital and the effect through greater happiness need further research (p. 239).

As stated, there is a need for research on the relationship between higher education and social capital.

Hurtado and Carter (1997) confirmed that students with positive experiences of engagement during their first two years of classes felt a stronger sense of belonging in their third year. Their research showed that a student participating in social and community organizations when combined with membership in other types of organizations, e.g., religious clubs, student government, and sports teams**,** supported a stronger sense of belonging. The student's sense of belonging was not challenged or threatened and persistence towards a degree continued (Hurtado & Carter, 1997).

Research also suggests student contact with faculty outside of the classroom promotes student persistence and completion (Astin 1993; Pascarella & Terenzini, 1991,

2005). Supporting student socialization to the normative values of the institution is a key. These interactions tend to create a bond between the student and the institution. Studies show that the amount of faculty-student interaction outside of the classroom is not as powerful as the perception by the student that the faculty cares about them as individuals and their success. This sense of caring promotes persistence and degree completion, regardless of other outside characteristics (Pascarella & Terenzini, 2005). However, as influential as relationships with faculty are to the student, peer relationships and associations formed by the students with other students also affect outcomes in a powerful manner (Astin 1993; Pascarella & Terenzini, 1991; 2005).

College environmental conditions exert independent effects on educational attainment. Cohesive peer environments, participation in college-sponsored activities, and efforts by the institution, all show concern about the student's well-being (Pascarella & Terenzini, 2005). Higher education serves multiple purposes. One purpose is to increase a student's human capital of knowledge, skills, and abilities therefore improving a student's ability to contribute to the economy and community. A second purpose is building a relationship between higher education and the community, supporting the integration of the student into the political and social nature of the community. Finally, current research evaluates the differences in externalities between the definitions of an average education. Research found that obtaining a degree may be used as a signal or a sorting device by businesses when offering employment contracts rather than the degree signaling higher education improves overall community participation because people with more years of education tend to be more engaged citizens (Helliwell & Putnam, 2007; Milligan, et al., 2004; Nie, et al., 1996). A significant institutional role is creating

opportunities for students to meet students who are different from them in religion, culture, race, ethnicity and social economic status. The opportunity for students to engage in diverse activities, whether they be based on race, culture, social, or intellectual perspectives help bridge diversity and create opportunities for the bonding of new friendships and forging new opportunities. Institutions that foster student growth through different perspectives encourage students to have a broader exposure to life's varied experiences. These opportunities and environmental factors contribute to student culture facilitating introductions to diverse people through on-campus friendships (Pascarella & Terenzini, 2005).

Therefore, the construct of a college classroom as a community can foster teaching with a sense of community through the social capital characteristics of trust, bridge building, networks, and participation. Students are able to experience the value of diversity through involvement with different cultures and perspectives with the resulting effect of gaining perceptions of personal satisfaction with their classroom performance similar to people doing things together in a community (McKinney, McKinney, Franiuk, & Schweitzer, 2006).

Social Capital and Education Causality Relationship

Causality can be interpreted in terms of whether the acquisition of knowledge, skills, and abilities through education increases social capital or whether the use or application of resources and information from social capital increases education and participation or both. The research of Milligan et al., (2004) proposed that increased years of education increased voter registration, knowledge, and turnout in the United States. Hauser (2000) studied academic abilities and concluded that education's effect on

social capital exceeded student verbal and quantitative abilities. Brand (2010) projected that a post-secondary degree raised participation in civic activities more in non-traditional students than in traditional students particularly when non-traditional student participation meant involvement through volunteering for community organizations and charities. Finally, college graduates had pro-social attitudes toward civil liberties and minorities (Kingston, Hubbard, Lapp, Schoeder, & Wilson, 2003).

Social capital is conceptualized as an aggregation of associated networks, norms and trust facilitating collective interactions for mutual economic and social benefits (Putnam 1993; 1995; 2000). Putnam theorized that social capital at the individual level is to be thought as an aggregate of two dimensions based upon trusting people and personal involvement in social activities. This trust reflects the bond people share across economic and ethnic groups (Rothstein & Uslaner, 2005). Trust is built as people learn to expect that other people will cooperate in mutual endeavors and not seek to be opportunistic in social and economic exchanges, which is the free-rider problem. Many surveys ask the question, "generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people" (Putnam, 2000). This operationalization of the social trust question is found in the General Social Survey and the World Values Survey (Putnam 1993; 1995; 2000).

Education and social capital studies. Three studies clarify the relationship between education and social capital. Two related studies, ten years apart, were based on U.S. data; the third study used international data. The U.S. studies examined the relative, absolute, and cumulative effects of education. The original study (Nie, et al., 1996) proposed that if more people were being educated, the result is a devaluation of the

credentialed degree and the associated social status with it. The research examined the externalities of education with respect to social capital being similar to human capital accumulated from years of education. The results of the Nie, et al. (1996) study favored education as a sorting device for employers, while the results of the second study (Helliwell & Putnam, 2007) supported the human capital model over the sorting model. The Helliwell and Putnam study built support for public investment in higher education based on the presumption of positive externalities in the accumulation of social capital that exceeded the additions to human capital (Helliwell & Putnam 1999; 2007). The research tends to favor the human capital model over the signaling model that said employees were hired based on a person having a degree (Moretti, 2004).

Nie, Junn and Stehlik-Barry study. The Nie, Junn and Stehlik-Barry (1996) research on effects of the average education on social capital used three concepts: relative effect, absolute effect, and cumulative effect. The relative effect of education meant the positive effect of education was offset by equal and negative effects of the average education and the relative model value of education dominates. The absolute effect of education meant if the positive effect of education was not offset by equal and negative effects of the average education, then the individual had an absolute or additive superiority over the average educated person. The cumulative effect of education meant that if the positive effect of education was equal and the average education effects were positive, then the community level of education was lifted higher in general and was cumulative. The Nie et al. analysis found positive externalities for social trust and negative externalities for social engagement. The research concluded that education has external and internal effects and did not support increased participation in group

membership as significant. The results supported the absolute effects of education in contrast to other studies supporting the accumulation of social capital paralleling the accumulation of human capital.

Helliwell-Putnam research. The message resulting from the Nie et al. research resulted in the second study by Helliwell and Putnam (2007) which was earlier mentioned by McMahon. This research study evaluated the same three models as Nie et al. and used the same data from the U.S. General Social Survey (GSS) (N = 22,445) and the Doyle Dane Benbach (DDB)-Needham Life Style survey (N = 76,156) as in the Nie et al. study. These surveys cover three decades of data from the early 1970s to the late 1990s. The GSS is interviewer based and the DDB-Needham Life Style survey is an annual mail questionnaire to a recruited panel of participants. The data are grouped by census regions allowing for regional variation in the data unlike the national ungrouped data of the Nie, et al., (1996) research.

The analysis framed measures of social trust and measures of social engagement with average education and own-education (self-declared) of the respondents with controls for time trending. In addition to identifying the respondents by census region, the data were coded by year to allow for change over time. These two changes were distinct controls in the model in contrast to the Nie et al. study. The positive effects were very large and highly significant in the simple (regional variation) model and remained significant in the more complex model (regional and change over time). Each additional year of education increased the likelihood of "being trusting" by .044 and more importantly the average education trust variable increased over time with the addition of the year variable of the three decades of surveys.

Social interaction variables showed that a one-year increase in education estimated a 9% to 14% increase in social participation arguing that regional variation was significant. This research countered the Nie, et al., (1996) research results of both positive and negative results on the relative education model and formal organizational membership. Professional organizational memberships increased with the additional years of education except for unions and farm bureaus. These are occupational organizations rather than voluntary membership organizations. A main difference between the two studies was the usage of a national education average and regional average; the negative effects of average education disappear with the use of the regional average. The results of the Helliwell-Putnam model supported increased education and supported positive contextual effects on social trust and participation.

The study results are slightly different for each variable due to slightly different phrasing of the questions and associated scaled answers in the GSS and DDB questionnaires. Table 2.1 shows separately the effects of self-reported years of education and average education, both measured in years, on the social trust variable. Both models show positive effects from both own and average education levels on trust and honesty variables.

Table 2.1

Comparing GSS and DDB Evidence on Social Trust

Equation	(a) GSS 1972-96	(ii) DDB 1975-97	(iii) DDB 1975-97	(iv) GSS 1972-96	(v) DDB 1975-97	(vi) DDB 1975-97
Sample	22,445	76,156	76,156	22,445	76,156	76,156
Dependent variable:	Trust	Honest	Honest (binary)	Trust	Honest	Honest (binary)
	Equations with full control variables			Simple equations with year effects		
Education in years	.0439	.0093	.0175	.0391	.0062	.0133
	(40.3)	(24.4)	(24.8)	(37.0)	(16.0)	(18.7)
Average education	.0244	.0057	.0096	.0602	.0130	.0206
In region (years)	(3.2)	(1.6)	(1.4)	(11.0)	(3.6)	(3.1)

Source: Adapted from Helliwell, J. F. & Putnam, R. D. (2007). Education and social capital. *Eastern Economic Journal.*

In the simple model, using only year variables, the effects of average education on trust are close to twice as large as on own-education which corroborates with the Nie, et al., (1996) study results. Column (a) shows that each additional year of education increased one's likelihood of being trusted by .044 in the change-over-time model. In the regional-only model, a one-year increase in the average level of education with the regional variable increased trust by .024. Looking at this change over time, with the average education increasing by almost 1.5 years from the 1970s to 1990s, the implied positive impact on trust (.1) over the same time period is almost as great as the negative impact on trust explained by other factors.

Regressing on the participation variables used a similar methodology with positive results from both the fully specified and simple models for memberships in both databases. These results are in contrast to the Nie, et al., (1996) study results of negativity between social participation and education. Looking at the results in terms of average education, the effects are significant for most types of formal organization. The

difference in results between the Nie, et al., (1996) study and the Helliwell and Putnam study were the regional variations within the data and control for effect of education over time, variables added by Helliwell and Putnam. The conclusions support higher levels of education are likely to be accompanied by higher levels of political and social engagement.

Gesthuizen, van der Meer and Scheepers study. The international study on social capital supported the results from the Helliwell and Putnam research (Gesthuizen, van der Meer, & Scheepers, 2008). Data were collected from 27,000 interviewees in 28 counties using the Eurobarometer survey (Version 62.2) from 2004. After data sampling and screening, the data were representative at the national level for 24 countries. Three education and social capital models were evaluated. High or low education was indicated if the respondent left school at eighteen years or less. Social capital was indicated as formal (organizations) or informal (family and friends). Results show in all cases educational attainment significantly affected the individuals' level of social capital. Through more years of completed education, the individuals built more associations, maintained these associations as friends and colleagues, and donated more informal help. In contrast, neighborhoods marked by low levels of education, these contrasts decreased. Neighborhood associations appeared to be based on communal traits and similarities among neighbors and less on outside interactions with other people. This "uniform educational effect" (Gesthuizen et al., 2008) model conceptually supported a higher investment in education that increased the capacity of the citizenry to participate in social capital functions.

The "localist orientation hypothesis" (Gesthuizen et al., 2008) model supported the less educated citizenry neighborhood orientation as well. The research supported recruitment through the networks hypothesis and higher education uniformly and positively improved the general effects of education. These effects increased the access by formerly inactive individuals with less education into networks where they interact with more educated people. This inclusion is perhaps "an unintended but positive effect of educational expansion in that it's positive consequences spill over to social groups that on average have little social capital" (Gesthuizen et al., 2008; p. 629).

Accountability to the community is in the interests of civil society and social capital; education should be more open and accountable on the grounds that social capital is also about developing mutual trust and understanding. Internal democracy between and within subject boundaries and groups is as much a principle of social capital as is independence from the state. Creating the atmosphere through which groups of researchers and practitioners are confident enough to take risks would be a healthy performance indicator of higher education institutions or indeed society (Wilmott, 1997).

A mix of academic knowledge and habits may help people be better employees and citizens. Research continues to explore and distinguish the causal impact of education relative to the causal mechanism of education. Specifically, students who benefit the most from post-secondary education are not the most talented or the least talented but the broad range in between the two extremes. The average student responds the most (Goldin & Katz, 1999).

Higher education in American was synthesized (Stevens, et al., 2008) to be a point of transition for students in four ways: (a) a place in which transitioning from

dependency of home to the independence of the adult environment is facilitated; (b) a place to live and learn new residential skills; (c) a place to collect and produce new knowledge and build on established foundations; and (d) a place where self-interest coalesces within the interests of family, industry and the state. In this way higher education is pivotally tied to the economy and society is defined by these previously enumerated causal relationships. Higher education is beyond being a finishing college club for the elite; it opens opportunities for students to acquire skills, knowledge and abilities to be better workers, partners, and citizens. Social capital builds upon the benefits of student knowledge and interactions. Students benefit from knowing that investment in social interactions build an accessible framework for a future moment in time (Stephens et al., 2008).

As stated, institutions of higher education are not just factories for human capital but also places where human relationships develop. Colleges and universities provide settings where social norms, values and networks are established and nourished. Social capital is not just a byproduct but also a resource in the process of education. Faculty and administration of any given institution teach students a style of behavior that is more than competing for incentives and may be based on a commitment to truth, duty, and justice which achieves better results. For institutions, the utility of higher education is not just personal consumption but is also built on the well-being of others. In this manner, faculty and staff of higher education institutions are uniquely qualified and also desire to help their students grow intellectually and socially (Penuel, et al., 2009).

Mapping Human and Social Capital. Social capital functions at three levels: individual, community, and governmental entities, e.g., city, county, state, nation (Schoo,

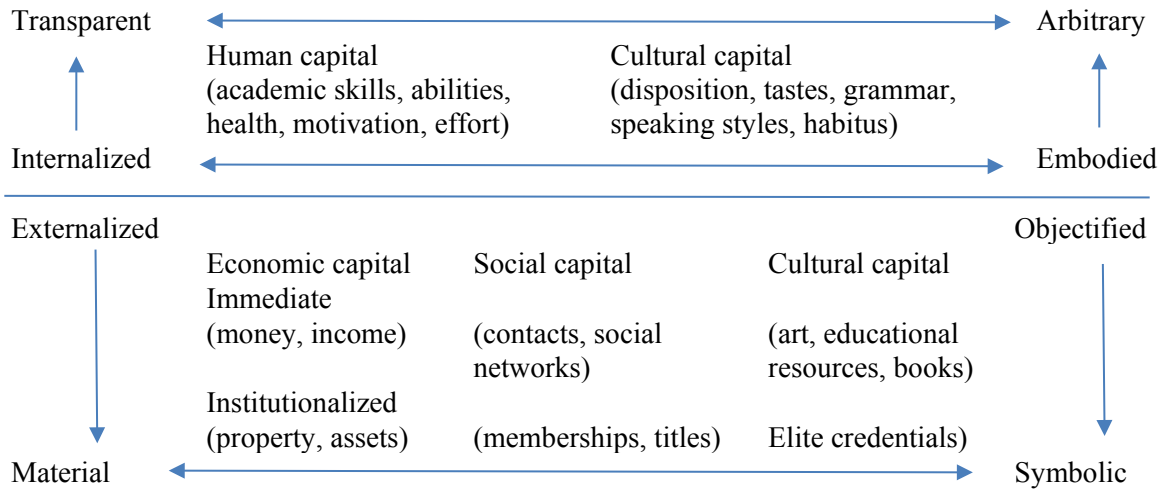
et al., 2005). Social capital includes both formal and informal participation in social activities. High participation is supposed to raise civic norms and support democratic society (Putnam, 2000). Education is one of the most important determinants of social capital (Putnam 1995, 2000; Brehm & Rahm, 1997; Alesina & la Ferrara, 2000). Schooling strengthens both human capital and social capital for economic and social development, and spreads knowledge (human capital) while instilling social norms (social capital) through training moral and cognitive capacities (Offe & Fuchs, 2002). Research using the World Values Survey asserted that the most robust correlate of social capital variables was years of school (Glaeser, Laibson, Scheinkman, & Scoutter, 2000).

Meta-analysis research by Huang, Maarsch, Brink, and Groot (2003) determined that one standard deviation of years of schooling accounted for the change in social capital by twelve to sixteen percent of the standard deviation in each dimension (trust, participation). The findings confirm that education is a strong and robust correlation of social capital. Controlling for average education supports the cumulative effect increasing the relative effect of education to be greater than the absolute effect (Helliwell & Putnam, 2007). The size of the schooling effect varies with the years of education as the larger effect size is significant for college degree holders. Huang et al. (2003) proposed that college education was a more efficient and critical stage in learning to trust processes which cultivated an active civic mentality.

Education is one of seven branches of individual needs and responsibilities, Appendix B, (Schoo, et al., 2005). Education provides more than mere skills and professional development. Skills and development can be learned through on-the-job training. For the purposes of higher education, the figure in Appendix B could be

reformatted to have two sub branches, one for human capital and one for social capital. Under the human capital branch are listed skills, professional development, qualifications, and languages. Also copied to this branch would be recognition, respect, career options/pathways, workload, and flexibility from the work branch. Under the social capital branch are listed lifestyle, friends, community, environment, motivation, and goals. These concepts are also listed on the personal branch. Social capital involves responsibilities to do to others as to self, support community, respects of others, and loyalty. Figure B.2 shows the challenges facing a college graduate in the organizational structure if their schooling has not prepared them for the complexity of organizational behavior (Appendix B). Figure B.3 (Appendix B) shows the how many of the tools taught in higher education help integrate a student into the community. The branches show social cohesion and education, individuals' social capital, opportunities using social capital, and the community capacity of social capital applications are part of the infrastructure (Schoo, et al., 2005).

The integrative Bourdieusian framework (Figure 2.1) offers a two-dimensional presentation of resources using established capital categories. The different types of capital can be viewed more transparently in terms of transactions shown on the horizontal axis. Social and cultural capitals are shown on the vertical axis and can be converted into material profits albeit in a more arbitrary fashion (Bourdieu, 1986; 2001).



Source: Adapted from Swartz, D. (1997). *Culture and Power: The Sociology of Pierre Bourdieu.* Chicago: University of Chicago Press.

Figure 2.1 Integrative Bourdieusian Framework

Diagramming symbolic resources such as Figure 2.1 shows their place in context and the difficulty of quantifying these resources in contrast to economic data (Bourdieu, 2001; Swartz 1997: p. 73-82). Important to remember is that these resources are not static and fluctuate dynamically between interpersonal relationships across types of actions.

Roots of Social Capital

Social capital has been characterized as a lens, a perspective and a paradigm (Woolcock & Narayan, 2000).

Early Roots of Social Capital – Hannifin and Dewey

Putnam (2000) uncovered a little known article from 1916 by L. C. Hannifin, and quoted it in his book, *Bowling Alone, the Collapse and Revival of American Community*. The quote by Hanifan defining social capital in 1916:

> I make no reference to the usual acceptation of the term capital, except in a figurative sense. I do not refer to real estate, or to personal property or to cold cash, but rather to that in life which tends to make these tangible substances count

> for most in the daily lives of people, namely, goodwill, fellowship, mutual sympathy and social intercourse among a group of individuals and families who make up a social unit, the rural community, whose logical center is the school….The individual is helpless socially, if left entirely to himself…. If he may come into contact with his neighbor, and they with other neighbors, there will be an accumulation of social capital, which may immediately satisfy his social needs and which may bear a social potentiality sufficient to the substantial improvement of living conditions in the whole community. The community as a whole will benefit by the cooperation of all its parts, while the individual will find in his associations the advantages of the help, the sympathy, and the fellowship of his neighbors." (p. 19)

Hanifan described a rural community in 1916. In 2000, Putnam referred to Hanifan's work emphasized that the roots of social capital were from rural communities even though much of the ongoing research occurs in urban areas. Similar ideas surfaced from another well-known educator the same year, John Dewey. John Dewey (1916) named three aspects of education, whose importance lies closely to social capital: (a) a structure exists of relations between and among actors as a resource for students; (b) parental knowledge is a resource; and (c) interactions exist between the home and school. Following Hannifin and Dewey, social capital theory developed for the next seventy years; in Europe with Bourdieu (1986); in America with Coleman (1988); and Putnam (1993, 2000).

Bourdieu and Social Capital

Bourdieu theorized social capital was a contract between social levels and partners. Economic capital is the foundation of a functioning society while other forms of capital, e.g., cultural and social capital, interpreted the distribution of non-physical capabilities unaddressed by economic theory. Bourdieu's concept was based on a class concept, with people using power and conflict from using social positions and responsibilities to affect control in the practice of symbolic power and exchange of promises. Bourdieu identified conflict as the result of the abuse or extreme control of social capital to modify social behaviors, just as the absence of social capital may result in the absence of social mores and acceptable behavior patterns (Bourdieu, 1986).

Bourdieu wrote about the power relationships that existed within the social capital structure, and when properly balanced, the relationships ensured the benefits accrued to the many not the few. Social capital in elite schools has been a topic of interest to research evaluating gender, ethnic, and racial barriers based upon the work of Pierre Bourdieu. Abuse of social capital, while inherent in the power structure, is only negative when the benefits accrue to the few instead of the many. Bourdieu applied the concept of social capital to examine social status and inequality, particularly the manner in which some are able to use their social connections to maintain or improve their high social status.

James Coleman and Social Capital

James Coleman (1988) enhanced the theoretical connection between social capital and education in a supplemental issue of the Journal of Sociology wrote:

> Social capital, however, comes about through changes in the relations among persons that facilitate action. If physical capital is wholly tangible,

> being embodied in observable material form, and human capital is less tangible, being embodied in the skills and knowledge acquired by an individual, social capital is less tangible yet, for it exists in the relations among persons. Just as physical capital and human capital facilitate productive activity, social capital does as well. (Coleman, p. S100).

Coleman examined the relationships between schools, family, and community. Coleman's work looked at the interactions between the school and the parental community in terms of "the norms, the social networks, and the relationships between adults and children that are of value for the child's growing up", partly a definition of social capital. Intergenerational closure generates transference of information between parents and children. Coleman described this relationship as follows: "children's behavior is modified as a result of their parents knowing and relating to the parents of other children" (Coleman, p. S106). In the early years of education (K-12), social capital and education are interrelated because of the strong bonds among family, schools, and the community. The reputation of any player is dependent on the closed structure, as described by Coleman, encompassing all the players. Sanctions ensuring trustworthiness rely on that closed structure or they are unsuccessfully applied. Using a data set from the High School and Beyond research project, Coleman measured family social capital in terms of socioeconomic status, number of siblings, types of household and parental level of education.

The creation of social capital is a by-product of other activities. The private side of social capital is embodied in trust between individuals. The public aspects of social capital are benefits accrued to rational actors having purposeful actions, which create or

destroy social capital between individuals. An individual does not own social capital, it is willed into or out of existence via individuals' actions. Usually the higher the level of education attained by people in the community, the higher the level of social capital (Coleman, 1988). This association is particularly important concerning the children of parents of low socio-economic status (SES). If parents of low SES students lack knowledge about the post-secondary educational process and its importance, then the gap in preparation for student access to post-secondary education becomes extremely problematic, a circular process (Rowan-Kenyon, Bell, & Perna 2008).

Robert Putnam and Social Capital

Putnam (1993) studied communities and civic engagement in Italy and explored civic social change in America. Putnam defined physical, human, and social capital: "Whereas physical capital refers to physical objects and human capital refers to properties of individuals, social capital refers to connections among individuals" (p. 19). Putnam studied the evolving social climate building on the social capital theory which preceded him. Putnam used data from the DDB Needham Marketing database to measure social capital. In this way, the existence of social capital in America solidified from a 40 year longitudinal data base and estimations of behavior between individuals, families, and their community could be analyzed (Putnam, 2000).

For this research, Putnam focused on a very specific behavior of social capital, namely membership in traditional organizations. More generally, Putnam stated that social capital was a networking process that translates into an individual's effectiveness in the community and workplace, and was a resource that ties communities together. The more the social capital increased, the more cohesive the relationships were between the

family, community, and workplace. Bourdieu and Coleman viewed social capital as a resource enabling individuals to better themselves, either socially or professionally. Putnam, in contrast to Bourdieu and Coleman, viewed social capital as a resource that functions at the level of the community and society. Putnam claimed that social capital was declining in America and that Americans have been "pulled apart from one another and our communities" due to decreasing levels of social capital measured using indices derived in his research (Putnam, 2000).

In 2003, Field argued that Bourdieu, Coleman, and Putnam were the three seminal authors in the field. By natural progression, the complexities of reviewing the social capital theory drove the need for definitions by researchers (Woolcock, 2010). Utilizing Putnam's index structure, Griswold and Nichols adapted it by using the data of selected questions from the DDB Needham survey to expand the foundation of any specific index (Griswold & Nichols, 2006). The resulting study validated the use of the social capital index as a community factor. Using this definition based on replicated data, the social capital lens defines itself as a community resource. The presence of social capital affected the quality of life in a community. The measurement structure of social capital as defined by Putnam was adaptable as shown by Griswold and Nichols in the gambling study (Griswold & Nichols, 2006).

Putnam's (2000) theory of civic disengagement in America meant that a disconnection between citizens developed over many years involving individuals, families, and extending into the communities. Putnam presented disengagement as a drop in traditional organizational membership. In years past, people joined organized clubs to connect with other people and share information. Shared information was based upon

reciprocity and the prospect of future benefits accrued or establishing trustworthiness with those connections. Putnam combined organizational membership with civic virtue to demonstrate that civic engagement was more powerful when combined with the network of reciprocal social relations. Such interactions helped people to build communities, make commitments to each other, and built a social fabric benefiting many people (Putnam, 2000).

Putnam established three main areas important to building social capital: civic engagement, informal social engagement, and tolerance combined with trust. Civic engagement (including politics) occurred through voting, active political knowledge, trusting, and the simple act of joining and being regularly involved in organized groups. Memberships were very significant to individual persistence and well-being. Joining a group expands the individual's social consciousness and encourages the reduction of distance (or disengagement) from family, friends and communities. Putnam provided data showing organizational membership declined 30% to 40% over the last three decades, i.e. the 1960s, 1970s, and 1980s. This decline was a symptom of people separating or disengaging themselves from supporting their communities and local institutions through various club activities (Putnam, 2000). Thus engagement of America's citizenry appeared to be waning through time and generational characteristics that reflected on a given neighborhoods' social life. Examining civic structures and policies throughout history revealed a generational cycle of decline and then resurgence. According to Putnam, the decline in social capital stemmed from women entering the workforce which changed the family structure towards singles or single parent families, lengthy commutes from suburban sprawl, and the resulting loss of ability to spend time in

the home community. All these factors contributed to the disengagement process and Putnam pointed out that America had declined and resurged many times over the past three-hundred years (Putnam, 2000).

The resulting disengagements between the "long civic generation" and younger generations were at the root of what Putnam wrote as the break in trust and tolerance. First, the inter-relationship between social change and generational change drove changes in consumption and beliefs. The second change was the change is social mores, i.e. birth control. The third change was the institutions in which people were involved. The older civic generation's cohesiveness involving memberships in groups, clubs, and organizations, knowing their neighbors and participating in their town's governance was not the same in younger generations. This cohesiveness contrasted with the younger generation's lack of interest with group memberships. If interactions with other people stimulated better connections, health and well-being, then the disengagement of the younger generations may be the root of the decline in social capital. To reverse this decline there must be a building of informal associations among the various people of a community helping to bridge important formal functions such as education and structured activities (Putnam, 2000).

Putnam's ideas resonated with many people and propelled scholarly inquiry. In addition, community-based social capital generated additional research examining all three levels of social capital: individual, family, and community (Appendix B), (Schoo, et al., 2005; Sobel, 2002). For example, Sobel (2002) noted that Putnam neglected newer sources of involvement of the younger generations, such as internet chat rooms and email, and focused instead on more traditional avenues of civic engagement.

Nevertheless, his central message was strong: interaction enabled people to build communities, to commit themselves to each other, and to knit the social fabric. In turn, this enhancement of social capital improved the quality of life.

Putnam's findings were:

> That high achieving suburban school districts have, in abundance, is social capital, which is educationally more important than financial capital. Conversely, where social connectedness is lacking, schools work less well, no matter how affluent the community….In other words, at Harvard as well as in Harlem, social connectedness boosts educational attainment. (Putnam, p. 306).

Putnam presented three arguments, using multiple sources of national data, to support correlations between social capital and education. The first argument, based on the Annie B. Casey child welfare index was 'across the various Kids Count indicators, social capital is second only poverty in the breadth and depth of its effects on children's lives' (Putnam, 2000, p. 297). Putnam's next point involved the high correlation between the social capital index and student scores on standardized tests from kindergarten through grade twelve. The correlation extended to the student retention rate. Lastly, Putnam's discussed the Bryk and Schneider study of public schools in Chicago and Catholic schools nationwide. The study results portrayed success as found in Catholic schools was attributable to the "network of social relations, characterized by trust, that constitute a form of social capital (Putnam, 2000).

Social Capital and Students of Low Socio-economic Status

The benefits of higher education through credential acquisition are the same for students of low socio-economic status as for all other students; however the journey is

more complex and difficult. Higher education is more than obtaining a credential; it is the broad scope of knowledge which students gain through relationships as they progress through their program of study to graduation. Expanding higher education to encompass students of diverse backgrounds is an economic driver to better the overall workforce (Stevens, et al., 2008).

Students with middle class or upper class background in a public or private secondary school have acquired social skills; with family backing they manage to survive the challenges of college level classes and the associated independent lifestyle. Students with lower middle and lower class backgrounds struggle with money management and life style changes when attending college (Gladieux & Perna, 2005). Gladieux and Perna's research discovered for the students from poorer monetary and social backgrounds wanting to go college that their preparation begins before high school graduation.

There are several challenges before completing the college application. The first challenge begins with accessing information flowing from high school counselors about college requirements, particularly if the parents have little knowledge about the process to obtain post-secondary education information (Rowan-Kenyon, et al., 2008). Research discovered the level of parental involvement, level of academic preparation and achievement, financial resources, knowledge about college, and family support, all increased knowledge. Parents have unique sources from personal experience about college seeking behavior; there may be an extended family with experience; and there may be an association with parents of other children the same age as their children. Parents' education and family income are positively associated with college seeking

behavior. Without these experiences and associated social network, lower income or disadvantaged parents, without any college education, are more dependent on information coming home from their child's school, than any other group (An, 2009).

All of the research points toward academic and social preparedness for post-secondary education. The impact of communication and networking between school administrators and staffs encourages parental involvement, in-service sessions for teachers about at-risk student interactions, and the school, to present itself as a caring community albeit with a challenging curriculum. Social capital is emphasized through efforts to teach and identify leadership tracks for students developing knowledge, skills, and abilities, enabling construction of social networks and organizational participation that facilitates goal achievement. Through properly preparing students, both academically and about the cost of student loans, students prepare for the effort required to attain their credential and avoid the huge impact of dropping out of school without a degree (An, 2009).

Disadvantaged students need strong economic motives to pursue college. Research highlights the financial return from a college degree is three times higher for men from a disadvantaged background than for most male students. For women, the return was twice as valuable (Brand, 2010). Once low SES students understand these economic returns, they are willing to explore the range of career options in contrast to limited availability of good jobs without a college degree or credential. When this knowledge is inserted into the community, new possibilities encourage students to plan on leaving poor job prospects behind and pursue the more general approach of the college-bound student (Brand & Xie, 2010). The challenges of the college-bound student

from a poor background include student preparedness, financial issues, student persistence, and the social impact of higher education.

Academic preparedness research using the National Educational Longitudinal Study (1988 to 1994) found low SES students' applications to post-secondary education were twenty-six points lower than other students (Cabrera & La Nasa, 2000). Further research into the applications of lower SES applicants, used a proposed model about students' decision making process. The model found the most important predictors for college behavior were academic preparation and achievement, financial resources, knowledge about college, and family support (Perna, 2006). Research findings from student interviews discovered that working-class parents generally relied on the local extended family for information versus middle class parents who associated with other middle class parents from their students' network (Lareau, 1987).

Research uncovered school counselors served as gatekeepers which impeded the flow of information to students with low socio-economic status backgrounds. School counselors were the source of resources, opportunities and information about post-secondary education. The dual role of teachers and counselors in these situations inhibited student curiosity and alienated the drive to acquire the skills needed for college seeking behavior (Stanton-Salazar, 1997).

Findings from a descriptive case study of fifteen high schools across five states used a model from Perna (2006). The studies brought forth questions about the direction of public policy addressing costs and access to post-secondary education in terms of both merit and need-based financial aid (Stanton-Salazar, 1997). From qualitative studies, researchers discovered, without generalizing, findings of general support for parental

economic investments associated with student college applications (An, 2009). Additionally, low SES students with high achievements came from homes with structured homework and academic activities. There were strong family support circles and the structure appeared to link to the mothers' education exceeding the tenth grade, whether the diploma is a GED, AA or a more advanced degree. These mothers were motivated that their children would have an education exceeding their own (Milne & Plourde, 2006). Finally, qualitative research findings pointed out that parents shaped college opportunity, schools shaped parental knowledge, school counseling was computer-based and impersonal, and students followed in family careers (Rowan-Kenyon et al., 2006).

Wells (2008) used the National Educational Longitudinal Study (1988 to 1994) to evaluate student persistence in pursuing a degree in terms of social and cultural capital. The results of the study's multinomial logistic regression models pointed to three findings: one, social capital and cultural capital are valuable constructs to disaggregate social class for quantitative research; two, postsecondary education requires a modified approach to retain students with lower levels of social and cultural capital; and three, social and cultural capital affect student persistence differently at four-year or two-year programs. One finding cautiously encouraged community colleges to continue their mission to serve the broad spectrum of part-time students because the two-year colleges appeared to have a more meritocratic approach than the four-year programs. Social and cultural capital appeared to not affect the level of persistence to the same degree as in four-year colleges allowing lower socio-economic status students to successfully persist. This finding should be of interested to four-year colleges when reevaluating recruitment and retention policies (Wells, 2008).

Even if the cost of attending an institution of higher education was not enough of a challenge, students from lower middle and lower class backgrounds struggled with money management and the exposure to different lifestyles of dormitory and fraternal living when attending college. Gladieux and Perna (2005) reported that lower SES students had a more successful progression towards their baccalaureate degree when they began with a two-year program at a community college and transferred to a four-year program than if they began their program at the four year college. This success may have been helped by the lower costs involved at a two-year program as students borrow less money than those attending a four-year program (Gladieux and Perna, 2005). After the two year academic experience the students were better prepared to balance the extracurricular activities, service groups, fraternal groups, intramural teams are associated with developing career-relevant skills (Pascarella & Terenzini, 2005).

There was a small and significant relationship between math scores, teacher interest, and college attendance for these students (Wells, 2008). The major findings on student aid loan borrowers who drop out were: half of all entering freshmen borrow; two-thirds of freshman completing a four-year degree at a four-year institution are likely to borrow and more than 20% of student loan borrowers drop out. In contrast, borrowers and non-borrowers have similar completion rates at four-year institutions of 60%. In addition, in a two year program students borrow less money than those in a four year program.

It appears all attendees needed some financing to complete the four-year program (Gladieux & Perna, 2005). Many of these students borrowed money to pay for their post-secondary education. Students with lower middle and lower class backgrounds struggled

with money management and exposure to different lifestyles when attending college (Gladieux and Perna 2005). Building on research by Perna three factors have been highlighted as helping students from disadvantaged backgrounds: one, parents shaped college opportunity for their children; two, parental involvement was shaped by the school presentation of college opportunity; and three, parental involvement was shaped by knowledge of post-secondary education, social, economic, and public policy content (Rowen-Kenyon, et al., 2008).

Data about borrowers who dropped out, persistence of students to degree attainment, socio-economic background of students, and college-seeking behavior were evaluated by Gladieux and Perna (2005) and Wells (2008). The primary data source was the 1988 National Educational Longitudinal Study database used in the Gladieux and Perna (2005) research combining the longitudinal Beginning Postsecondary Students (BPS) study from the National Center for Education Statistics (NCES) of the U. S. Department of Education with the National Student Loan Data System (NSLDS). This combined file was the most complete data set to date of data about students and student loan financial information. A secondary article about the community colleges used the National Educational Longitudinal Study (1988 to 1994) from NCES interpreted the 12th-Graders ANEP-Scaled Mathematics Performance Using High School Predictors and Postsecondary Outcomes from the (NELS:88) study to project levels of student persistence at second-year and four-year institutions. Three qualitative studies were selected to focus on the intangibles linking social capital to education.

Brand and Xie (2010) published a study proposing heterogeneity as the norm not the exception for students with various background characteristics. The study used

heterogeneity to estimate the returns to schooling after examining the effects of completing a college program through using a hierarchical linear model based on propensity score strata (long term earnings). The study used data from the National Longitudinal Survey of Youth 1979 (N = 1,265 men, N = 1,209 women) and the Wisconsin Longitudinal Study (N = 3,690 men and 4,215 women). The model estimated which students were likely to attend college. The researchers developed a positive or negative selection pattern of economic benefits promoting college attendance. The evidence suggested negative selection by individuals most likely to benefit from attending college were the ones least likely to attend. The logit model listed the following variables as significant predictors for college completion ($p < .05$): Hispanic women, (negative), mother's education (positive), father's education (positive), intact family (positive), siblings (negative); mental ability (positive $p < .001$), and friends plans (positive $p < .001$). There were varying degrees of significance between men and women and the NLSY and the WLS databases. Additional findings from the Brand and Xie (2010) study support the negative selection theory as individuals from disadvantaged social backgrounds can use their college accomplishment for economic mobility.

Contrast this model with people from a normally advantaged social background who can rely on their access to resources and abilities for regular earnings without needing a college degree. They are less driven by the economic rationale and more driven by cultural norms (Brand & Xie, 2010). Students with a middle or upper class background, regardless of public or private education, have learned social skills and with their family backing have easier navigation through the challenges of college level classes and lifestyle (Wells, 2008).

A study from the Institute for Research on Poverty discovered that persistence can be increased after monitoring students assigned to one of three groups with ranking of low, medium, or high likelihood of persisting in college three years after they began. Those assignments were made using a variety of characteristics, e.g., the parents' education level, standardized-test scores, and parents' help when the student applied for financial aid (Goldric-Rab, Harris, Benson, & Kelchen, 2011).

The crucial issue for secondary and higher education is to bridge the social needs of the socially less advantaged through disseminating knowledge about attainable goals in higher education. This process in higher education better facilitates the socially less advantaged student to gain knowledge about attainable goals, money, advice, friendship, emotional nurturance, and information as they move towards program completion. In this way a social capital foundation is built preparing a low-income student for entering post-secondary education.

Social capital and Service-learning

D'Agostino (2010) examined service learning and social capital as tool for developing civic education programs to decrease civic erosion. Service learning programs place students into the community and build relations between the two (Keith; 1998). Dorado & Giles (2004) were unable to find many studies concerning the relationship between service learning and the associated community, so they conducted student interviews identifying three student and community engagement paths. Driscoll, Holland, Gelmon, & Kerrigan (1996) developed a case study model to assess the impact of service learning on a community. Cruz & Giles (2000) conducted research with community partners about their relationships and the willingness to work with students in

a service-learning program. Howard (2006) looked at middle school students and allocated time spent between service learning and television. Howard's study revealed a significant relationship in that less television was correlated to more service learning in the community.

The problem with the empirical research to this point is that it has examined intellectual and student outcomes, development of student/citizen characteristics, and community building as an influencing factor or as an outcome but not social capital. D'Agostino's research surveyed 898 students from Rutgers Citizenship and Service Education program (CASE). The service-learning course was a forty-hour, one-semester course for credit. The course was mandatory or optional depending upon the student's program of study allowing for the comparison of students with or without the service-learning component. Smith (2005) identified variation between the two groups sufficient to keep content similarity as a confounding effect and ascertain the impact of service learning. Differences in outcomes may not be entirely the effect of service-learning courses but student characteristics. In this way, one of the challenges in determining the relationship between social capital and service learning is identified (Campbell, 2000; Print & Coleman, 2003).

Student characteristics affecting social capital may be targeted through behavior patterns found within the categories of social capital, e.g., volunteerism, organizational participation, and meeting of obligations (Putnam, 2000). In the absence of research, cross-walks were evaluated in the absence of pre-existing knowledge of social capital (Myers-Lipton, 1996; Shadish, Cox, & Campbell, 2002).

The research findings support that a student's completion of a service-learning

programs increased social capital accumulation, trust and networking indices (D'Agostino, 2010). Surprising, there are few studies published about the relationship of a practicum, internship, or field experience, published or in dissertations. There are many studies using community service and social capital pointing the way to research evaluating a possible proxy of community service.

National Testing and Surveys

The National Survey of Student Engagement (NSSE) is administered in over 800 colleges and universities. The NSSE survey reports improved student engagement through the enriching educational experience benchmark. Knowing what students actually learn in college is the target of the Voluntary System of Accountability (VSA) project sponsored by the American Association of Colleges and Universities (AACU) and the National Association of State Universities and Land Grant Colleges (NASULGC). The VSA organization developed the College Portrait, which is a voluntary process for higher education institutions to submit information about their campus, programs, student experiences via one of four student engagement surveys measuring student learning outcomes in terms of cognitive skills in the broader context of academic learning. Not only is the NSSE part of these surveys, it is one of the most widely used undergraduate surveys used in this collection (College Portrait, 2012; AACU, 2012; NASULGC, 2012).

Utilizing the enriching educational experience variable is pertinent in understanding student success through looking at institutional programming. The variable as defined in the National Survey of Student Engagement (NSSE) means the student had participated in a practicum, internship, field experience, co-op experience,

clinical assignment, co-curricular activities, community service, volunteer work, foreign language coursework, study abroad, independent study, or a self-designed major. In the research literature, other important relationships were uncovered, e.g., service-learning, community-based learning, community-based research, civic engagement, Campus Compact, College Portrait, and the Carnegie Engagement Index (Zuiches, Cowling, Clark, Clayton, Helm, Henry, Morris, Moore, Navey-Davis, Schulze, Thornton, & Warren, 2008). Additional institutional and student surveys included the National Association of Colleges and Businesses (NACE).

Some education techniques show better results than others. The success of these techniques lends themselves to possible expansion of these techniques into non-traditional areas. Pascarella, Seifert and Blaich, (2011) successfully replicated the National Survey of Student Engagement (NSSE) indirect measurement of student behaviors to learning outcomes. The research findings suggest "those institutions using the NSSE can have reasonable confidence that the benchmarks scales do, in fact, measure exposure to experiences that predict student progress on important educational outcomes, independent of the level of these outcomes at which an institution's student body enters college" (p. 6).

National Associations of Colleges and Employers Survey

Community partnerships may be the weak link in the enriching educational experience. Improving student academic skills through the service-learning pedagogy can positively improve the relationships needed for the successful student enriching educational experience (Gelmon, Holland, Driscoll, Spring, & Kerrigan, 2001). Bringing the community into the classroom is a pedagogical adaptation. Taking the

student into the campus community (co-curricular model) or the larger community (internship, practicum, field experience, clinical assignment, community-service, and volunteering) requires community partnerships. These relationships contribute to the institutional mission, better learning, and preparation by the student (Berger & Liss, 2012; Lichtenstein, Thorme, Cutforth, & Tombari, 2011).

With the emphasis on the NSSE, it is important to find other research pertinent to the enriching educational experience. The National Associations of Colleges and Employers survey is valuable because it specifically examines an enriching educational experience which helps guide the student towards full-time employment after graduation (NACE, 2011; NACE, 2012). Specifically, in 2011 the internship and co-operative experience questions were added to the annual survey.

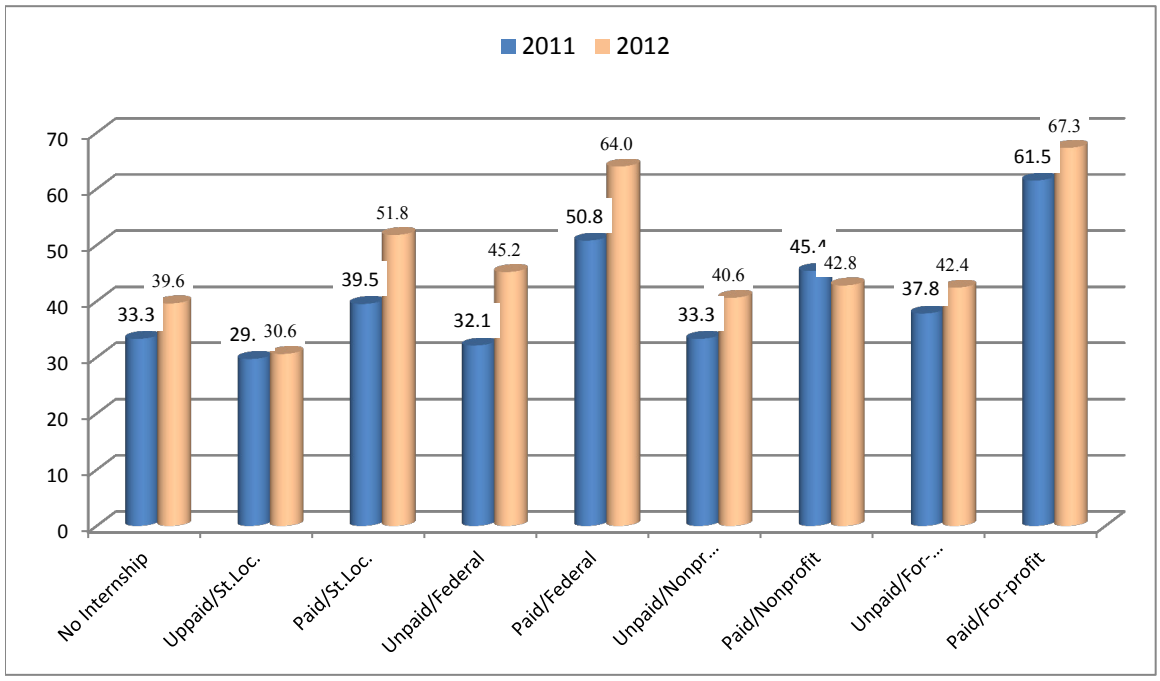
The NACE survey includes student respondents from 600 colleges and universities and sheds light on the relationship between colleges and employers. The major campuses have NACE survey membership unlike other surveys mentioned except for the NSSE. Important to this study was the addition of questions about paid and unpaid internships. There were four significant findings about internships, which are part of the enriching educational experience. First, more than half of the responding NACE seniors had an internship or co-op experience. Second, almost half of these internships were unpaid. Third, students with paid internships fared better in the job market search with job offers than the student with an unpaid or no internship at all. Fourth, the poor job search results by the student with an unpaid internship signaled the unpaid internship effort offered no advantage over the job seeking student who did not participate in the internship process (NACE, 2011).

The learning outcomes of the enriching educational experience are mixed according to the National Association of Colleges and Businesses (NACE) survey concerning the internship program. When examining these survey results in context of the principles of the service-learning model, a new relationship surfaces between service-learning and the enriching educational experience in terms of the community partnership (NACE, 2011; NACE 2012).

The ranking by type of internship and full-time job offers is shown in Table 2.2. The success rate of the paid internship leading to job offers was 61.5% in 2011 and 67.3% in 2012, followed by the paid Federal internship at 50.8% in 2011 and 64.0% in 2012. The third highest is also a paid internship at the state followed by the first unpaid internship at a for-profit institution. These success rates of full-time job offers highlighted the success of placing students into the paid internship. The underlying theme appeared to be the value a community business or organization placed on a student project and the opportunity to learn about the student as well as the student to learn in the business or organizational environment. This investment creates a job opportunity if the student has the skill set needed to successfully complete the internship.

Table 2.2

Full-Time Offers by Type of Internship Experience



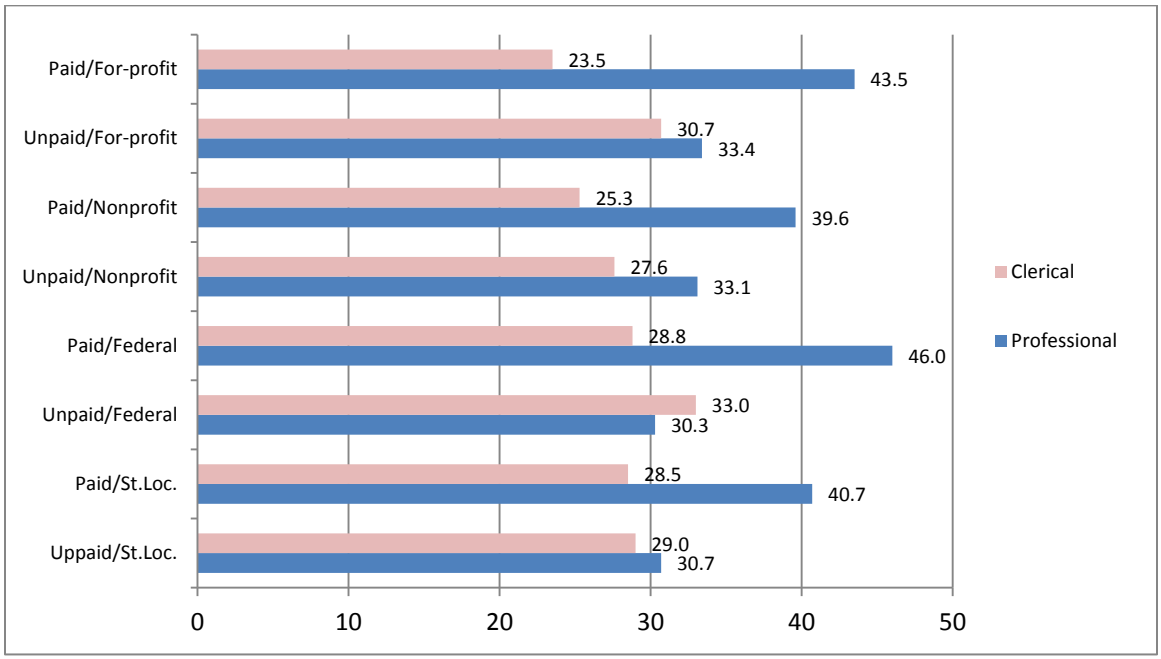
Source: Adapted from NACE. (2011). The Class of 2011 Student Survey Report. NACE: Bethlehem, PA.

Table 2.2 was based on the type of work students performed during their internship and relevant professional experience in the internship. The percentage of time while a student is in a paid internship performing professional duties rather than clerical duties is highest in the paid/for-profit internship at 43.5% versus 30.7% clerical duties. Paid internships are generally characterized with professional attributes that delivered a more professional level experience. Only in the unpaid Federal internship were clerical duties a predominant percentage (33%). Seniors with internships had a significantly higher number of job offers prior to graduation. The unpaid internship appeared, with clerical and non-essential functions, to provide little help in providing a graduate with full-time employment potential. The 2012 survey findings further examined the 2011 differentials between paid and unpaid internships and reported improved job offer rates

for students with unpaid internships over those with no internships, 32.1% to 45.2% in an unpaid Federal internship (Table 2.2).

Table 2.3

Internship Experiences by Type of Internship.



Source: Adapted from NACE. (2011). The Class of 2011 Student Survey Report. NACE: Bethlehem, PA.

According to the NACE survey, this experience at the end of the student career may or may not add to the overall student experience.

Research into the service-learning experience revealed student development and engagement. Service learning programs placed students into the community and built relations between the two (Keith, 1998). Dorado and Giles (2004) were unable to find many studies concerning the relationship between service learning and the associated community, so they conducted student interviews, identifying three student and community engagement paths. In 1996, Driscoll developed a case study model assessing the impact of service learning on a community. Cruz and Giles (2000) conducted

research with community partners about their relationships and the willingness to work with students in a service-learning program.

National Organizations

Two university programs developed through building relationships between the classrooms, the campus, the community and faculty. Two university programs show evidence of success in problem solving techniques based on the pedagogy of Campus Compact and Project Pericles. Opportunities were created for students to work in the community and the community to appreciate the programs from which students were graduating. These two programs of public and private colleges and universities have successfully integrated programs between the post-secondary colleges and universities and their associated communities (Campus Compact, 2012; Project Pericles, 2012).

Project Pericles began in 2001, with a three way interaction-based relationship model between the classroom, the campus, and community. From 2004 to 2009, 26 colleges developed classes combining "academic engagement with applied knowledge and social responsibility" (Berger & Liss, 2012, p. 3). After evaluating the outcomes of the 100 courses in 26 colleges, the Periclean Faculty Leadership Program (FLP) developed a fourth component to the Project Pericles Civic Education Triangle and created the Periclean diamond.

The diamond construct delivers the needed motivation for all concerned parties (Berger & Liss, 2012). This model supports recognition of faculty research in developing and disseminating information through this process as valid campus research requiring peer review and formal presentation of project successes. The following diagram demonstrates the Periclean diamond.

Figure 2.2 shows the four components and interactions between the classroom, the campus, the public community, and the scholarly community. It is called the Pericles Diamond.

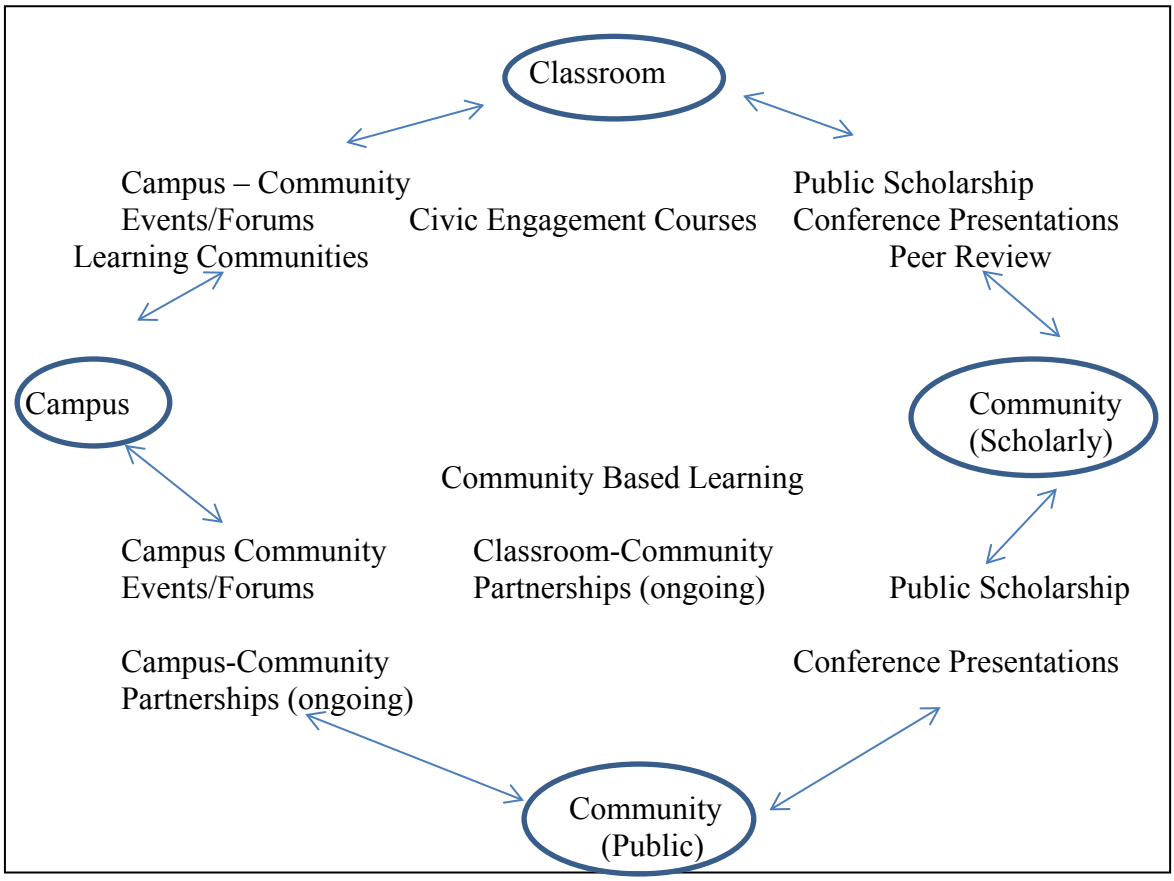


Figure 2.2 *Periclean Diamond*

Instead of naming these programs as service learning, Project Pericles used the term "community based learning" and more closely aligned the programs with community service and volunteerism (Berger & Liss, 2012). This high engagement learning process stressed the transformational experience occurring through intensive attention, activity, and reflection. Education was accomplished through and by students, faculty, and community partners not just to the students. The Project worked with faculty

members from all academic disciplines showing the strength of the model for student engagement and increasing civic citizenship (Berger & Liss, 2012).

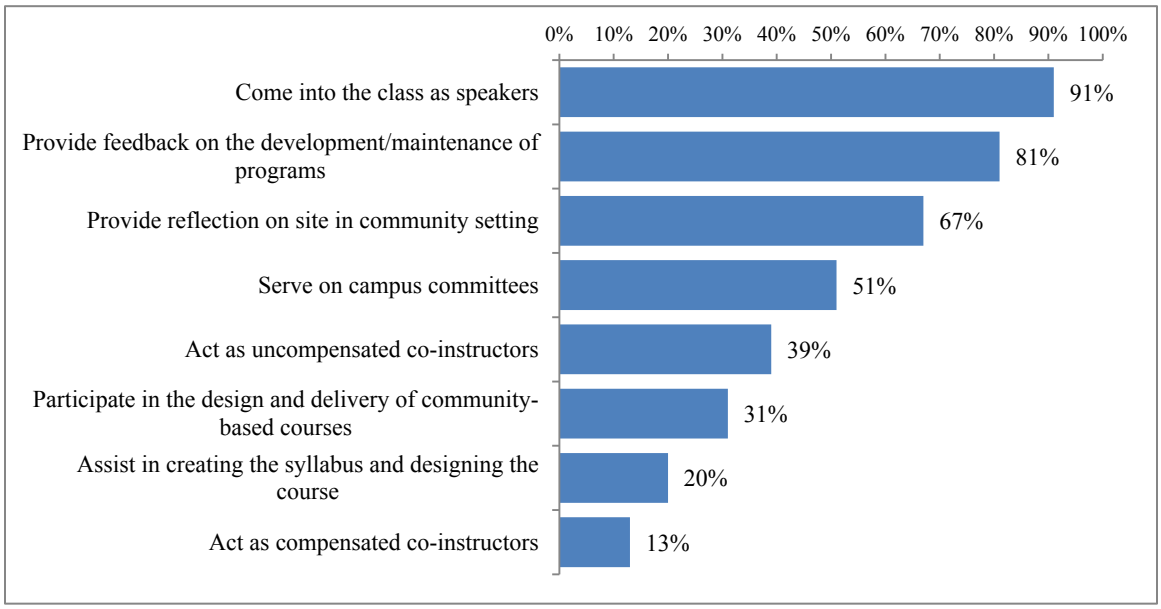
Another national organization was the Campus Compact. This organization has promoted civic engagement between the institutions promoting the public purposes of higher education for over 25 years. The annual survey included almost 1,200 member colleges and universities. Results showed the importance of ongoing partnerships and engagement between the community and the institution of higher learning. Table 2.3 highlights the community partners' involvement in student learning engagement (Campus Compact, 2012).

Most programs reported (91%) community partnerships are part of the class as members of the community come into the class as speakers. Secondly, 81% of the community partners provide feedback on the development/maintenance of programs. Almost 70% of the partners provide reflection on site in the community setting about the program and service on campus committees. Over half of the community partners serve on campus committees (51%). Some of the partners serve as uncompensated co-instructors (39%) and participate in the design and delivery of community-based outcomes (31%). A small number of partners assist in creating the syllabus and designing the course (20%) and act as compensated co-instructors (13%).

The top issues addressed through campus compact programs are displayed in Table 2.4.

Table 2.4

Community Partner Involvement in Student Learning and Engagement

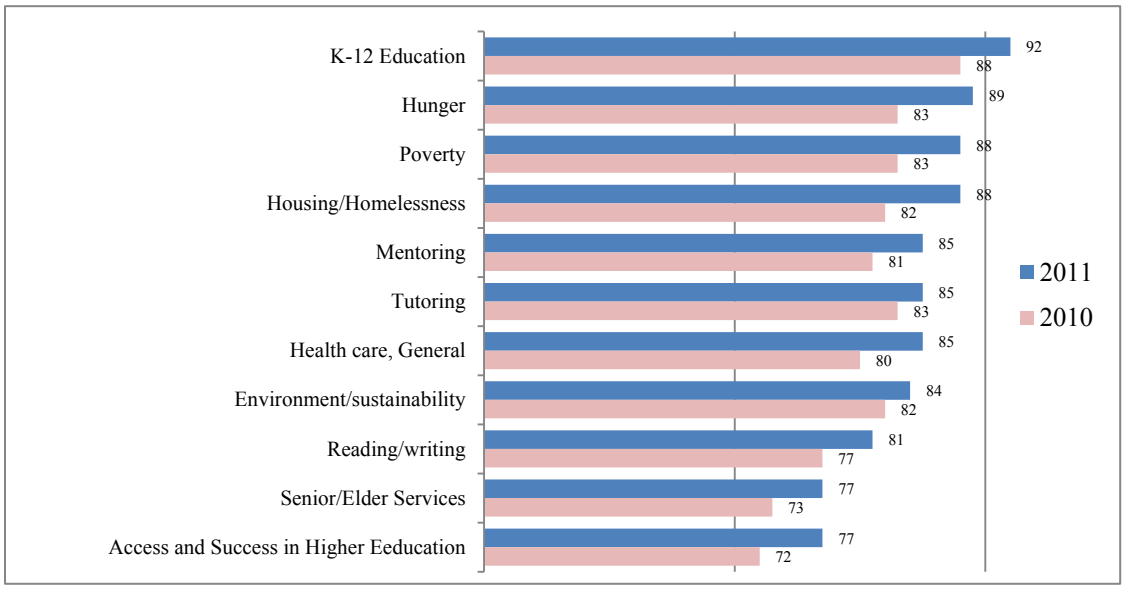


Source: Adapted from Campus Compact, 2011 Annual Membership Survey, Executive Summary.

The results show a one-year change for schools targeting a broad spectrum of need; with K-12 the most broadly addressed area (92%) by the surveyed schools. There is a renewed concern about the effects of the recession with emphasis on social issues of hunger (89%), poverty (88%), housing/homelessness (88%), and health care in general (85%). Types of engagement programs ranged from one-day service projects to internships, capstone courses, and international service and service-learning opportunities. Ninety-four percent of surveyed campuses offered service-learning classes (Campus Compact, 2012).

Table 2.5

Top issues addressed through campus programs, 2010 and 2011 (percent)



Source: Adapted from Campus Compact, 2011 Annual Membership Survey, Executive Summary.

There are hazards involved with attaining recognition for community engagement. The proponents of community engagement (Carnegie Foundation, 2013) look for an institution-wide commitment. This commitment is not easily accomplished. Students have to grasp the importance of the service learning and the community based enriching education experience. There are challenges intrinsic any university working with community partners. The community partners must be willing to teach the student the importance of their business through designing student project allowing participation and reflection and not to use the student as free labor. The NACE (2011) survey highlighted the flaws of the 'free labor' internships in terms to benefit the student. This is a very real hazard for the student and the continuing of the relationship between the community partner and the institute of higher education.

As service learning pedagogy involves the three parties (faculty, student, and community partnership) the opportunity to participate and build the network between the three enhances the technical assistance required to design pedagogy. The student commits to a serious effort with demonstrable energy and critical thinking skills working in partnerships developed between the service learning program and the community partner. The community partner and faculty design coordinate to design a professional style project for the student. A properly designed project will contribute to the student portfolio. The construction of the portfolio may make the difference in the job interview or graduate school interview. This three way working relationship insures that each member recognizes the importance of the others contribution. In this manner, the student in an unpaid internship may gain expertise from participating in a discovery process and gain more professionalism.

College environmental conditions exert independent effects on educational attainment. Particularly important conditions are cohesive peer environments, participation in college-sponsored activities, and efforts by the institution to show concern about the student's well-being (Pascarella & Terenzini, 2005). Types of contacts matter most when students have the opportunity to engage in diverse activities, whether they are based on race, culture, social, or intellectual perspectives. Institutions that foster student growth in diverse perspectives allow students' broader exposure to life's varied experiences. These opportunities or environmental factors contribute to the available peer culture that enables students to develop activities that bridge their introduction to different types of people in order to bond in a closer manner with on-campus friendships (Pascarella & Terenzini, 2005). Therefore, learning communities foster the social capital

characteristics of trust, bridge building, networks, and participation. Students are able to experience the values of diversity through involvement with different cultures and perspectives, hopefully with the resulting effect of learning to do things together in a community (McKinney, et al., 2006).

Research in student engagement in educationally purposeful activities points to these activities as the single most important predictor for student success (Astin, 1993; Pascarella & Terenzini, 1991, 2005; Pace, 1980). The foundation for student engagement indicators was based on seven principles created by Chickering and Gamson (1987). Framing these principles within the institutional environment supports student perceptions of being included and developing positive commitment attitudes about goals and achievement (Education Commission of the States, 1995; Kuh, et al., 2005; Pascarella & Terenzini, 2005). Student engagement is as important as their academic attendance for student success. Successfully engaging students facilitates learning and an application of problem solving techniques while completing their program of study (Kuh, et al., 2006).

Improving student outcomes at the post-secondary educational level comes from the benefits accruing to both the better prepared student and faculty. The failure is a huge loss in terms of faculty and student self-esteem, institutional success rates, community workforce, and overall general well-being of society (Kuh, 2007; Kuh, 2003; Kuh, 2001; Kuh, et al., 2007; Kuh, et al., 2006; Kuh, 2005; Kuh & Hu, 2001).

The importance of the student enriching educational experience matters because this experience teaches students to collaborate with other students, faculty, and the larger community. Students learn more about themselves and their attitudes towards people of

other economic, social, or ethnic backgrounds, whether student, faculty, or different facets of society. The experience is framed in terms of internships, field experiences, community service or volunteer work, foreign language coursework, study abroad semester, independent study or self-assigned major, culminating senior experience, co-curricular activities, and learning communities.

National Survey of Student Engagement

Research results from student development and engagement projects cumulated with the National Survey on Student Engagement (NSSE). The NSSE measures environmental practices considered as central to student achievement. These measurements assist participating institutions in improving the student learning processes (National Survey on Student Engagement, 2010; Zhao & Kuh, 2004).

The NSSE resulted from research conducted by Robert Pace (1979) on student effort and perception. Pace concluded that increased student engagement resulted in greater learning gains. First, the College Student Experiences Questionnaire (CSEQ) was developed as a measurement tool tracking student satisfaction; persistence, effort, and the quality of effort students expend utilizing campus resources and opportunities for learning (CSEQ, 2010). The CSEQ was designed for both instance and longitudinal research. Kuh's (2001) research reported that student involvement with educationally purposeful activities tends to result in desired college outcomes, such as graduation, better grades, and greater persistence. The benefits of higher education are manifested into student engagement through actively recruiting students into participating in the academic environment.

The value of the enriching educational experience would be to improve student outcomes without increasing student credits required for graduation or increasing institutional costs associated with classes. The benefit of the enriching education experience is a better prepared student and the detriment is the loss to student self-esteem, institutional success rates, community workforce, and overall well-being of society in general (National Survey Student Engagement, 2007; Pascarella, et al., 2011).

The NSSE contains a question specifically about the enriching educational experience. Ongoing research projects evaluate the enriching educational experience as a complementary learning relationship existing inside and outside of the classroom augmenting the academic program through students' experiencing diversity (NSSE, 2007; NSSE, 2008). The importance of the NSSE as a tool for evaluating existing programs and measurement criteria is an area in which research targets the effectiveness of the experience.

According to Kuh (2005), the enriching educational experience complemented the goals of the academic experience. Important to students' developing abilities was exposure to diversity with other students and cultures. Using technology to bridge divergent areas and facilitate instruction increased collaboration among students and faculty outside of the classroom. These activities were usually in addition to the basic program requirements and program success appeared to increase through experiences outside of the classroom. These experiences provided students with opportunities to collaborate, synthesize, integrate, participate, and apply their knowledge in new and varied surroundings. Student learning became more meaningful and more deeply integrated into their psyche as a result of these experiences. The faculty and institution

encouraged contact among students with diverse economic, social, and racial and ethnic backgrounds through contact with faculty outside of class, attendance at cultural events, leadership development, spiritual and religious development, and group membership (Kuh, et al., 2005).

NSSE Benchmarks

Even though the NSSE respondents are self-selecting, which may limit the generalizability of the results, the validity of the NSSE benchmarks have been independently upheld by Pascarella, et al. (2011) using the longitudinal Wabash National Study 2006-2009 data.

The NSSE benchmarks are based on the "Seven Principles for Good Practice in Undergraduate Education" (Chickering & Gamson, 1987). The seven principles are: one encourages contact between students and faculty; two, develops reciprocity and cooperation among students; three, encourages active learning; four, gives prompt feedback; five, emphasizes time on task; six, communicates high expectations; and seven, respects diverse talents and ways of learning. The Chickering spiral of student development is in Appendix C. The NSSE benchmarks of effective educational practice are five broad measures derived from student responses to 42 questions, these measures are an important key to student learning and development (NSSE). These five benchmarks are (a), level of academic challenge; (b), active and collaborative learning; (c), student-faculty interaction; (d), enriching educational experiences, and (e), supportive campus environment (Pascarella & Terenzini, 1991, 2005). The validity of the NSSE benchmarks has been upheld and lends credibility to the expanding concept of the student active learning collaboration and enriching educational experience benchmarks

(Chamberlain, 2009; Kuh, 2007; Kuh, 2003; Kuh, 2001; Kuh, et al., 2007; Kuh, et al., 2006; Kuh, et al., 2005; Kuh, & Hu, 2001; Pascarella, et al., 2011).

Participation is a fundamental key to student engagement. Tinto (1997) wrote of the phenomena of students and faculty working together in clusters of courses that build supportive networks through bridge building and trust. These cluster courses, resulted in the bridging of academic and social divides among students from varied backgrounds of race, ethnicity, and economic status. Looking at this model from the social capital perspective, educational theory uncovers the interconnectedness of the various categories of social capital: academic challenge, active collaborative learning, student-faculty interaction, enriching educational experience, and supportive campus environment. Of particular interest is the enriching educational experience.

Academic challenge. The level of academic challenge is central to the student learning process and is measured by the quality of the student work, results from the complexity of cognitive tasks, assigned work and faculty evaluations. Students interact with fellow students inside and outside of class and may take interdisciplinary classes with a specific student cohort. Questions in this benchmark specifically address course work, meeting instructor's standards and the institutional emphasis on studying and academic work. These questions address the students' ability to coordinate and organize multiple priorities while successfully completing coursework. Questions also involve interactions with varying pedagogies of faculty members in and outside of the classroom contributing to the student experience (Kuh, et al., 2005).

Active collaborative learning. Collaborative learning assesses the intensity of student involvement during their education process and the practical applications of that

learning. NSSE questions ask about active classroom group work, active discussions of coursework with people beyond the group of fellow classmates, tutoring or teaching other students (paid or voluntary), and community-based projects. Work solving real world problems through a practicum, internship, field experience, cooperative experience or clinical assignment may be part of the program. When students collaborate with others to solve problems or master difficult material, these skills have future value enabling adaptation to unexpected situations needing critical thinking skills. These questions show the importance of interactive learning in building successful communication skills (Astin, 1993; Kuh, et al., 2005).

Student – faculty interaction. Student interaction with faculty builds for the student a sense of trust for people with power, as faculty control the reward of a good grade (Bean, 1983). Students are more likely to persist in their goals when faculty teach and are supportive of student endeavors. Students have the opportunity to evaluate the quality of relationships between themselves and other students, faculty, and administrative personnel. These relationships build and enforce generalized trust. Trust is very important for student success and satisfaction through the student experience (Kuh, et al., 2005; Pascarella & Terenzini, 2005).

Enriching educational experience. The enriching educational experience complements the goals of the academic experience. Important to students' developing abilities is exposure to diversity with other students and cultures. Using technology to bridge divergent areas and facilitate instruction increased collaboration among students and faculty outside of the classroom. Increasing learning through the educational experience includes internships, field experience, community service, volunteering,

foreign language work, studying abroad, self-designed major, and a senior culminating experience. These activities are usually in addition to the basic program requirements. Key is the fact this experience is outside of the classroom. These experiences provide students with opportunities to collaborate, synthesize, integrate, participate, and apply their knowledge in new and varied surroundings. Student learning becomes more meaningful and more deeply integrated into their psyche as a result of these experiences. The faculty and institution encourage contact among students with diverse economic, social, and racial and ethnic backgrounds through contact with faculty outside of class, attendance at cultural events, leadership development, spiritual and religious development, and group membership (Kuh, et al., 2005).

Supportive campus environment. These questions concern the major tools students' use to meet their obligations. The supportive campus has a pedagogy helping students to succeed academically. Student development professionals help students cope with nonacademic responsibilities whether it is work, family, peers, or other obligations. The campus encourages students to thrive socially and promotes good relations between students and peers, students and faculty, and students and administrative staff (Kuh, et al., 2007).

Measuring Social Capital

The original concept of a social capital index as developed by Putnam has been utilized in several databases describing peoples' behavior patterns relative to family, friends, and community. There are several social capital indices built from survey data in several countries and organizations for measuring social capital. Internationally, the World Bank uses two tools for social capital measurement, the Social Capital Assessment

Tool (SOCAT), and the Social Capital Integrated Questionnaire (SOCAP IQ), (World Bank, 2011). Examples of national studies include the Office for National Statistics (ONS) in the United Kingdom using a general household survey as a measurement tool (ONS, 2002) and the Australian Bureau of Statistics added social capital characteristics to the Australian General Social Survey in 2002. At the individual level, in the United States, the Roper Center for Public Opinion Research conducted a 'Social Capital Benchmark Survey' in 2000. The Roper survey interviewed in person a national cross section of approximately 2,000 respondents over two decades. The multi-state, stratified probability sample with quotas for sex, age, and employed women remained constant over twenty years from 1973 to 1994 (Putnam 2000, p. 420). In New Zealand, the Spellerberg report proposed guidelines detailing the implementation of social capital questions into government surveys (Spellerberg, 2001).

Common features in all of these studies are constructs of giving, participation and engagement, reciprocity within the community, generalized trust, trust toward public officials and institutions, norms, attitudinal variables important to social capital, and confidence in the continuation of social and political relationships. Specific examples include the concept that people give without expectations of an immediate reward, a belief that an individual can depend upon their community in a time of need, and an individual's belief about themselves and their tolerance of others, motivations and fears, all which build confidence in the future.

The NSSE data fit this model in several ways. An important fact is the degree of belonging a student has when attending college. The college is a community in itself and the ways of participating in various activities builds the student's social capital.

Research concerning students of color and lower socio-economic status shows a sense of belonging when attending higher education classes contributes to their success (Hurtado and Carter, 1997). There might be different senses of engagement for people of different races and ethnic backgrounds. Hurtado and Carter contend that integration does not necessarily mean the same things to those of traditionally underrepresented backgrounds. Hurtado and Carter research highlights that bridging or bonding types of group membership bring different benefits to students. Students participate in mainstream activities, perhaps dominated by a primary group, also highlight student participation in smaller groups may build support systems enabling student survival in the mainstream activities whether it be a group based on race, ethnicity, program, or social.

Based on Putnam's research data and using the same data file, Griswold & Nichols (2006) built an index using sub-group indices based on research from New Zealand (Spellman, 2001). Statistics New Zealand surveys utilize Spellman's research about social behavior when constructing survey questions. Further development of social capital as a quantifiable index is provided by specific studies by Griswold and Nichols (2006) and Mertz (2008). Griswold and Nichol's research (2006) targeted the level of social capital and casino gambling in 215 metropolitan areas. The results showed a negative impact of gambling upon the communities when gaming was within 15 miles. The third researcher, Mertz (2006) built a similar social capital index structure using sub-group indices from the National Student Engagement Survey (NSSE) data. Mertz's research results showed a positive relationship between levels of social capital as a predictor of graduation rates for African American Students. Specific social capital variables predicting graduation rates were the supportive campus environment and

bridge-building. These researchers developed constructs based on trust, networking, civic engagement, voluntary activity, participation, giving, and meeting obligations.

Summary

One of the keys in educating students and encouraging their involvement in their decision-making process is the enriching educational experience. The National Survey of Student Engagement (NSSE) asks questions pertinent to student engagement, demographics and successful undergraduate program completion. Through analyzing student behaviors and attitudes by using social capital categories, it is possible to estimate changes in student accumulation of social capital over time by evaluating specified characteristics. The research problem estimates the amount of student social capital accumulation from a student participating in the enriching educational experience as defined in the NSSE.

A National Association of Colleges and Employers (NACE) report finds that only professionally-oriented internships better prepare students for employment opportunities. Social capital theory states that people with social capital do better in most environments through using networking and principles of engagement with other people. The NACE results find that the internship experience has mixed results for students. As the internship experience is part of the enriching educational experience, these results point to the problem under investigation which is the enriching educational experience and the accumulation of social capital. Social capital theory suggests students with social capital skills are better prepared for life after college.

D'Agostino's (2010) research findings supported that student's completion of a service-learning program increased social capital accumulation, trust and networking

indices. Additionally, the completion of a service-learning program is a predictor of increased social capital, while there was no effect on trust, and increased networking skills. Helliwell and Putnam (2007) research estimated that the number of years of cumulative education reduced the negative impact on social capital factors of trust, civic attitude, and organizational membership. Pascarella, et al., (2010) replicated NSSE research in that institutional-level NSSE benchmark scores were significantly positive when association occurred between three of the seven liberal arts outcomes at the end of the first year of college. Finally, Kuh (2008), Padgett, Johnson & Pascarella (2012) research estimated students accumulating social capital between their first year and their final year by participating in an assortment of classroom and extracurricular activities.

The deficiency of these studies is a specific evaluation of the enriching educational experience in terms of student social capital. More specifically, the student experience many have no effect, some effect or a great effect on students' accumulation of social capital and has never been researched. This study will examine that question.

In the next chapter, the method is discussed.

Chapter Three: Research Methodology

This research examined the effect of the National Survey of Student Engagement's (NSSE) enriching educational experience on student social capital from the 2009 exiting student cohort. The research project analyzed data from the 2009 survey at a western land-grant university. This chapter discusses the research methodology used in testing student participation in the enriching educational experience (EEE) on the student accumulation of social capital. Based on Creswell (2009), this chapter is organized into nine parts: (a) study design, (b) population and sample, (c) instrument, (d) variables, (e) exploratory procedures, (f) threats to validity, (g) the procedure, (h) data analysis, (i) interpreting results, and (j) summary.

Study Design

The perceived deficiencies in existing research about student social capital and the impact from student participation in the enriching educational experience is the focus of this research. The student experience from participation may have no effect, some effect, or a great effect on student social capital. It appears, to date, that these data have not been researched. This study will examine this question in an exploratory sense. Creswell (2009) defined quantitative research method as pre-determined, instrument based questions, performance, attitude, observational, or census data, statistical analysis, and statistical interpretation (p. 15). This study is a quantitative, exploratory, and correlational-comparative design. The purpose is to provide a quantitative estimation of the impact of student participation in an enriching educational experience on the accumulation of student social capital from survey data by National Survey of Student

Engagement. By doing this study, other aspects of this relationship may be found for further research.

The National Survey of Student Engagement (NSSE) is the survey tool and the data were collected from a western land-grant university. The NSSE is administered annually; however, the participants are selected at random for each survey administration at participation universities. The data collection is web-based and housed at the NSSE administrative home. The data collected on behalf of the institution is released to the institution for analysis by NSSE to the university administration. The data used in this analysis was released to the researcher after Institutional Review Board approval by the university administration.

Using the NSSE data, the study focuses on estimating student social capital based on the student's decision to participation or not to participate in an enriching education experience (Chapter 1, definitions).

The following null hypotheses were examined:

1. Social capital growth

   $H0_1$ At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital between participants and non-participants in an enriching educational experience.

2. Social capital growth by category

   $H0_2$ At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital by type (civic, trust, volunteering, giving, participation, meeting

obligations) between participants and non-participants in an enriching educational experience.

3. Social capital growth by student characteristics

$H0_3$ At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital by demographics (Greek membership, parental educational background, race, ethnicity, gender, student-athlete status, program of study, grade point average) between participants and non-participants in an enriching educational experience.

Population and Sample

The data encompassed more students than the sample model required. The survey data included freshman, sophomores, juniors, seniors, and others from a western land-grant university. For this study, data were extracted for the exiting students in 2009 (seniors). The objective of this study was the determination of a change in exiting student social capital from participation in the enriching educational experience.

There are 714 exiting students. Students of other class types (sophomore, junior, other) were deleted. Mahalanobis distribution recognized seven records as outliers ($df = 29$, $X^2 = 74.745$). These records were not deleted as the outliers were insignificant, or approximately 1% of the data.

Instrument

The instrument is the National Survey of Student Engagement. A sample of the 2009 instrument is included as Appendix A. Survey administration is performed via a web-based procedure and data are collected by the NSSE administrative unit at the

University of Indiana. The NSSE has had content validity performed by multiple researchers as well as construct validity. Strong reliability was indicated from the Pascarella research (Pascarella, et al., 2011). The questions for this study were selected for analysis using guidelines developed by Putnam (2000) and Spellerberg (2001) criteria.

The data from this survey were housed at the western land-grant university. Upon approval by the institutional review board the data were made accessible to the researcher after any personal information was removed from the data. The student data are on electronic media and was analyzed using IBM SPSS Statistics 22. Analysis and calculations included the generation of descriptive statistics, correlations, ANOVAs, t-tests, and linear regression analysis involving stepwise regressions.

Variables

For the first hypothesis, the dependent variable was social capital calculated from twenty-nine questions from each student record and added to the record as a new field. These twenty-nine questions and the mapping into social categories are discussed later. The dependent variable is student social capital. The independent variable is the enriching educational experience (EEE). The EEE variable has eight definitions:

- completed practicum, internship, field experience, co-op experience, or clinical assignment
- completed community service or volunteer work
- completed participation in a learning environment or some other formal program where groups of students take two or more classes together

- completed work on a research project with a faculty member outside of course or program requirements
- completed foreign language coursework
- completed independent study of self-designed major
- completed study abroad
- completed culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)

For the second hypothesis, there are six dependent variables, one for each sub-group of social capital: civics, trust, volunteering, participation, giving, and meeting obligations. The independent variable is the enriching educational experience, previously described. Six regressions are run, one for each dependent variable.

For the third hypothesis, the dependent variable is the overall student social capital. The independent variable is the enriching educational experience and various student attributes: Greek membership, parental educational background, race, ethnicity, gender, student-athlete status, program of study, and grade point average.

Social Capital (Total) Variable

The conversion process of the National Survey of Student Engagement survey questions required specific content analysis as developed by Putnam (2000). This study uses the NSSE survey data to estimate numerical values for seven social capital dependent variables; overall social capital is the average of twenty-nine fields. The six sub-group categories use the same twenty-nine questions pertinent to one of the following categories: civics, trust, volunteering, participation, giving, and meeting obligations. Likert style answers for the survey questions, ranged from one to four through one to

seven. The answers were normalizing from the Likert scale answers to decimal scale answers. The following section outlines the criteria used by Spellerberg (2001) at Statistics New Zealand to create a social capital index using specific questions drawn from the NSSE data to proxy these categories.

The first step was to select the questions to create the social capital index variables using word content analysis from previously established research (Griswold and Nichols, 2006; Putnam, 2000; Spellerberg, 2001). The overall social capital index for a student was calculated from all of the normalized answers from the selected twenty-nine questions. The major categories in this study were: (a) Group A – Civic, (b) Group B – Trust, (c) Group C – Volunteering, (d) Group D – Participation, (e) Group E – Giving, (f) Group F – Meeting Obligations. Table 3.1 lists the fourteen indicators from the seminal research establishing types of social capital (Putnam, 2000).

Table 3.1

The Fourteen Indicators Comprising Putnam's Social Capital Index Cross-walk

Measures of community organizational life
Served on a committee of local organization in last year (percent)
Served as officer of some club or organization in last year (percent)
Civic and social organization per 1,000 population
Mean number of club meetings attended in last year
Mean number of group memberships
Measures of engagement in public affairs
Turnout in presidential elections, 1988 and 1992
Attended public meeting on town or school affairs in last year (percent)
Measures of community
Number of nonprofit (501c3) organizations per 1,000 population
Mean number of times worked on community project in the last year
Mean number of times did volunteer work last year in last year
Measures of informal sociability
Agree that "I spend a lot of time visiting friends"
Mean number of times entertained at home last year
Measures of social trust
Agree that "most people can be trusted"
Agree that "most people are honest"

The twenty-nine selected questions were averaged to an overall student social capital field and also separated into six categories using research that expanded from the original fourteen indicators (Putnam, 2000) to six categories of social capital (Spellerberg, 2001). The six categories that comprise the social capital index are:

- civic engagement – voting and participating community leadership
- trust – both personal and generalized

- voluntary activity – formal and informal situations
- giving – time, money, blood, information
- participation – clubs rather than social service activity
- meeting obligations – family, cultural, religious obligations, paying taxes

Categories of Social Capital

There are six sub-groups or categories of social capital. This section describes the definitions and allocation of fields into each of the categories.

Category one – civic. Civic generalities and attributes listed below are followed by the selected questions from the DDB Needham Life Style survey (Putnam 2000). The following concepts about attitudes toward government and other societal institutions are from the SNZ suggested breakout of attitudes and values.

Measures of who pays attention to what is going on in the world (particularly in their own community):

- reading local (and national) newspapers
- being aware of who runs the local council and higher level elected officials
- knowing how the country is governed
- discussing who to vote for
- voting in local and national elections
- listening to or watching the news on radio or television

Attitudes to government and other societal institutions:

- confidence in elected officials
- a belief that politicians are interested in people's welfare

- a belief that governmental officials care about public interests
- trust in the judicial system
- opinion of the education system
- faith in the health system
- confidence in the freedom to speak out in opposition to an established norm or opinion

The following NSSE questions were selected generating the civic category using the SNZ criteria.

- Attended campus events and activities (special speakers, cultural performances, athletic events (Q10f)
- Attended an art exhibit, play, dance, music, theater, or other performance (Q6a)
- Voting in local, state, or national elections (Q11i)
- Contributing to the welfare of your community (Q11o)

The Likert scale scores are normalized to the decimal system. The average of the normalized answers was calculated by year and student status (freshman or senior) generating a value for the civic category and added to the student record.

Category two – trust. The second category is trust and it can be personal or generalized trust as defined by Putnam (2000). Generalities about trust are listed below and the selected questions from the NSSE follow. The following concepts about self and others are from the Statistics New Zealand (SNZ, 2001) report suggested breakout of attitudes and values.

About Self:

- how one views one's place in society

- how one feels valued by society
- whether you would feel missed if you were missing or dead
- whether you feel angry or depressed
- whether you think life is meaningful
- whether you feel connected to other people or lonely and isolated
- perceived ability to change personal life situation
- perceived ability to influence politics or make claims on officials

About others:

- does everyone have an equal value
- does society need to care for people who cannot look after themselves
- whether you would help a stranger
- opinion on a range of social and political activities
- tolerance towards outsiders
- tolerance toward marginalized people
- enjoyment of living among diversified population
- fears of diversity of people
- would you cheat on your taxes

Trust and reciprocity:

- trust in other people, including strangers
- belief about whether people would try to take advantage of others if they got the chance
- whether you feel safe in your local area

- optimism about others' motivation
- whether you see any personal advantage in cheating
- whether you have a positive outlook for the future
- goals for the future
- expectation of achievement of goals

Selected NSSE questions for the Trust category using the SNZ criteria follow. Remaining questions reflect various degrees of agreement or disagreement.

- quality of relationships with other students (Q8a)
- quality of relationships with faculty members (Q8b)
- quality of relationships with administrative personnel and offices (Q8c)
- encouraging contact among students from different economic, social, and racial or ethnic backgrounds (Q10c)
- working effectively with others (Q11h)
- developing a personal code of values and ethics (Q11n)

The Likert scale scores are normalized to the decimal system. The average of the normalized answers was calculated by year and student status (freshman or senior) generating a value for the trust category and added to the student record.

Category three – volunteerism. Measures of the tendency of people to give willingly to strangers include (Putnam 2000):

- time (volunteering)
- experience and expertise (voluntary advice)
- formal activities, officer positions in organizations

The following question from the NSSE creates the volunteerism category using the SNZ criteria.

- tutored or taught other students (paid or voluntary) (Q1j)
- participated in a community–based project (e.g. service learning) as part of a regular course (Q1k)
- worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.) (Q1s)
- solving complex real–world problems (Q11m)

The average of this question is updated to the student record selected by year and student status generating a value for the Volunteering category.

Category four – participation. Participation measures the social interactions people have with others through formal organizations. Putnam (2000) builds this indicator primarily on participation in horizontal associations. Knack and Keefer (1997) pointed out the lack of an effect of horizontal associations when discussing the impact of trust and civic indicators on economic development. This study aims for a balance between different types of associational membership for this category. Selections utilize the SNZ criteria, including active memberships, which may be of a mandatory or volunteer basis, or any of the following type of groups:

- special interest or hobby club
- service organization
- trade union
- churches / places of worship
- performing arts/cultural groups

- schools
- sports club

The following NSSE questions were selected generating the Participation category using the SNZ criteria.

- exercised or participated in physical fitness activities (Q6)
- participated in activities to enhance your spirituality (worship, meditation, prayer, etc.) (Q6c)
- developing a personal code of values and ethics (Q11n)
- participating in co–curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.) (Q9d)
- working effectively with others (Q11h)

The Likert scale scores are normalized to the decimal system.The average of the normalized answers was calculated by year and student status (freshman or senior) generating a value for the participation category and added to the individual student record.

Category five – giving. Measures of giving include:

- social service activity
- giving time, money, blood, information

The following NSSE questions were selected generating the giving category using the SNZ criteria.

- understanding people of other racial and ethnic backgrounds (Q11l)

- tried to better understand someone else's views by imagining how an issue looks from his or her perspective (Q6e)
- had serious conversations with students of a different race or ethnicity than your own (Q1u)
- had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values (Q1v)

The Likert scale scores are normalized to the decimal system. The average of the normalized answers was calculated by year and student status (freshman or senior) generating a value for the giving category and added to the individual student record.

Category six – meeting obligations of family and friends. Measures of the relationships and interactions people have with others on an informal basis include:

1. extent of borrowing from neighbors, family or friends
2. doing favors for sick neighbors or friends
3. frequency of socializing with friends or fellow workers
4. tendency to discuss personal problems with friends
5. tendency to discuss political topics with friends
6. looking after a child or someone who is ill or has a disability

The following NSSE questions were selected generating the meeting obligations of family and friends category.

- the school environment providing the support you need to help you succeed academically (Q10b)
- the school environments helping you cope with your non-academic responsibilities (work, family, etc.) (Q10d)

- the school providing the support you need to thrive socially (Q10e)
- acquiring job or work-related knowledge and skill (Q11b)
- working for pay on campus (Q9b)
- working for pay off campus (Q9c)
- providing care for dependents living with you (parents, children, spouse, etc.) (Q9f)

The Likert scale scores were normalized to the decimal system.The average of the normalized answers was calculated by year and student status (freshman or senior) generating a value for the meeting obligations category and updated to the student record.

Recapping this discussion about the categories of social capital is Table 3.2 listing the social capital category and mapping of selected NSSE questions.

Table 3.2

Social Capital Mapping of National Survey of Student Engagement Questions

Social Capital Category	NSSE Question
Trust – both personal and generalized	
Relationships with other students	Q8a
Relationships with faculty members	Q8b
Relationships with administrative personnel and offices	Q8c
Developing a personal code of values and ethics	Q11n
Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	Q10c
Civic engagement – voting and participating community leadership	
Attended campus events and activities (special speakers, cultural performances, athletic events	Q10f
Attended an art exhibit, play, dance, music, theatre or other performance	Q6a
Voting in local, state, or national elections	Q11i
Contributing to the welfare of your community	Q11o
Voluntary activity – formal and informal situations	
Tutored or taught other students (paid or voluntary)	Q1j
Contributed to solving complex real world problems	Q11m
Participated in a community-based project (e.g. service learning) as part of a regular course	Q1k
Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	Q1s
Participation – clubs rather than social service activity	
Exercised or participated in physical fitness activities	Q6b
Participated in activities to enhance your spirituality	Q6c
Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)	Q9d
Working effectively with others	Q11h
Developing a deepened sense of spirituality	Q11p
Giving – money, blood, information	
Understanding people of other racial and ethnic backgrounds	Q11l
Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	Q6e
Had serious conversations with students of a different race or ethnicity than your own	Q1u

Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	Q1v
Meeting obligations – family, cultural, religious obligations, paying taxes	
Providing the support you need to help you succeed academically	Q10b
Helping you cope with your non-academic responsibilities (work, family, etc.)	Q10d
Providing the support you need to thrive socially	Q10e
Acquiring job or work-related knowledge and skills	Q11b
Working for pay on campus	Q9b
Working for pay off campus	Q9c
Providing care for dependents living with you (parents, children, spouse, etc.)	Q9f

Exploratory Procedures

The perceived deficiencies in existing research about student social capital and the impact from student participation in the enriching educational experience was the focus of this research. The student experience from participation may have no effect, some effect, or a great effect on student social capital. It appears, to date, that this data has not been researched or generalized. This study will examine this question in an exploratory sense. A unique design may be framed to base this inquiry from this quantitative, exploratory, and correlational comparative research design. The purpose is to provide a quantitative description of the impact of student participation in an enriching educational experience on the accumulation of student social capital. By doing this study, other aspects of this relationship may be found for further research. Participation or non-participation status was determined by student answers to question 7 of the NSSE (appendix A). If a student responded to question 7 with a 'Done' or 'Plan to do', then the student is considered a participant. If a student responded 'No' or 'Have not decided',

then the student is considered a non-participant. In this manner students self-select their participation in the enriching educational experience.

Threats to Validity

Threats to internal validity in this study were identified using definitions described by Creswell (2009). Threats in this study are historical, maturation and selection. External selection and setting threats exist as a result of the single college used for this study. The ability to apply these findings to other institutions of higher education will be limited; however, replication studies at other colleges may support any significant findings. External threats to history may be mitigated by the use of additional years in which the survey was administered. The reader is cautioned about the deriving assumptions from the results of this study and applying to other areas.

The Procedure

There are five parts to the procedure which processed the data for analyzing the three hypotheses.

Step One

To predict the change in social capital of an exiting student (senior), a new field of student social capital was added to each student record. Six sub-group indices were also calculated (civic, trust, volunteering, giving, participation, and meeting obligations) and updated to each student record.

Step Two

The data were tested for skewness and kurtosis and appropriate fields were transformed due to the degree of the skewness or kurtosis. ANOVAS, t-tests, correlations were run establishing significance, normality, and reliability of the data.

Step Three

The focus of the first hypothesis begins with the following equation (1). Social capital was the dependent variable, alpha (α) was the intercept, eight dichotomous enriching educational experiences (Table 3.3) were the main independent variable (EEE), and the unexplained error (ε). Students may have completed more than one of these experiences therefore dummy variables were created for each value. Eight coded variables, one for each type of experience, were added to the individual record. The following equation (1) was the regression used to estimate the impact of the enriching educational experience on exiting student social capital.

$$ESSC = \alpha + \beta EEE_8^1 + \varepsilon \quad (1)$$

Table 3.3

Values to the Enriching Educational Experience Variable

EEE_1	=1 means practicum, internship, field experience, co-op experience, or clinical assignment
EEE_2	=1 means community service or volunteer work
EEE_3	= 1 means participate in a learning environment or some other formal program where groups of students take two or more classes together
EEE_4	= 1 means work on a research project with a faculty member outside of course or program requirements
EEE_5	= 1 means foreign language coursework
EEE_6	= 1 means independent study or self-designed major
EEE_7	= 1 means study abroad
EEE_8	= 1 means culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)

These are the procedures to estimate the proportion of accumulated social capital attributed to the enriching educational experience for the first hypothesis.

Step Four

The second hypothesis used the same procedures and regression as run in steps one through three previously listed. Each of the social capital sub-group variables (civic, trust, volunteering, giving, participation, and meeting obligations) served as the dependent variable in the six linear regressions. The second hypotheses has six iterations: (a), dependent variable of civic social capital; (b), dependent variable of trust capital; (c), dependent variable of volunteering capital; (d), dependent variable of giving social capital;(e) , dependent variable of participation social capital; and (f) dependent variable of meeting obligations social capital.

$$ESSC_X = \alpha + \beta EEE_8^1 + \varepsilon \quad (2)$$

The independent variables in the previous equation (2) are the eight dummy variables for the completed enriching educational experiences (Table 3.3). This equation (2) estimated the impact of the enriching educational experience on the more specifically defined sub-groups of student social capital.

Step Five

The third hypothesis returned to the overall student social capital of the first hypotheses and added student attributes. The following equation (3) evaluated any effects of student-athlete, parental educational background, Greek membership, gender, race and ethnicity, self-reported grades, or program of study on the model of student social capital being changed through participation in the enriching educational experience. This equation (3) estimated the impact of the enriching educational experience and student attributes on exiting student social capital.

$$ESSC = \alpha + \beta EEE_8^1 + \beta SA_{(x)} + \varepsilon \quad (3)$$

See Table 3.3 for the EEE variable descriptions. SA means student attributes (student-athlete, parental educational background, Greek membership, gender, race and ethnicity, self-reported grades, or program of study).

Data Analysis

All information used in this analysis was derived from the NSSE questionnaire data. Many NSSE questions used Likert scales, other fields were factual information such as Greek membership and parental educational background. Likert data were converted from varying scale to a ten point scale. Descriptive statistics were computed and data pre-analysis screening performed to determine missing data, outliers, normality, linearity, homoscedasticity. Following this process, any necessary transformations were performed and the student social capital fields were calculated and added to the individual records. No missing data were replaced as the there was less than 5% missing records for any given variable. Correlations and reliability analysis were run verifying the significance of sorting the questions into categories based on research by Putnam (2000) and Spellerberg (2001). Reliability of the correlation analysis was established through using the coefficient alpha. Alpha coefficients for the subset of questions measuring these categories were measured and a Cronbach's Alpha coefficient analyzed for the desired value higher than 0.7, however 0.6 will be acceptable.

Ordinary least squares linear regressions were used to analyze the data. The inferential statistical tests used to examine the hypothesis under study were t-tests, ANOVA, and F-statistics at the ($p \leq .05$ and $p \leq .01$) level. Table 3.4 shows the proposed statistical tests for the three hypotheses.

Table 3.4

Ordinary Least Squares Regression Testing Model for Hypothesis One

Hypothesis One		B	*SE*	*B*	*t*	Significance
	Intercept					
	$EEE_{(a)}$ (prac,intern)					
	$EEE_{(b)}$ (comm or vol)					
Dependent	$EEE_{(c)}$ (learn comm)					
Variable: Exiting	$EEE_{(d)}$ (o/s research)					
Student Social	$EEE_{(e)}$ (foreign lang)					
Capital (ESSC)	$EEE_{(f)}$ (study abroad)					
	$EEE_{(g)}$ (self-design)					
	$EEE_{(h)}$ (culminating exp)					
	Error term					
Hypothesis Two	Intercept					
	$EEE_{(a)}$ (prac,intern)					
	$EEE_{(b)}$ (comm or vol)					
	$EEE_{(c)}$ (learn comm)					
Dependent	$EEE_{(d)}$ (o/s research)					
Variable: $ESSC_{1,6}$	$EEE_{(e)}$ (foreign lang)					
(6 different types	$EEE_{(f)}$ (study abroad)					
of social capital	$EEE_{(g)}$ (self-design)					
indices)	$EEE_{(h)}$ (culminating exp)					
	Error term					
Hypothesis Three	Intercept					
	$EEE_{(a)}$ (prac,intern)					
	$EEE_{(b)}$ (comm or vol)					
	$EEE_{(c)}$ (learn comm)					
	$EEE_{(d)}$ (o/s research)					
Dependent	$EEE_{(e)}$ (foreign lang)					
Variable: Social	$EEE_{(f)}$ (study abroad)					
Capital (ESSC)	$EEE_{(g)}$ (self-design)					
	$EEE_{(h)}$ (culminating exp)					
	Student Attributes (1,8)					
	Error terms					

The regression will examine the statistically significant ($p < .05$ and $p < .01$) amount of change (Beta coefficient) and standard error, *t* statistic, and the two-tailed significance by variable. ANOVA test determining the *F* statistic established homogeneity of variance

and the *t* - test statistics, being above the critical cut off for the degrees of freedom associated with the number of variables, will support rejection of the null hypotheses of the no significant difference from student participation in the enriching educational experience. The two tailed significance will indicate the amount of change rejecting the null hypothesis to be of significance.

Interpreting Results

Interpreting results considers the significance of the various statistical tests used in evaluating the data. These results will discuss the strength of the data and the model in terms of R^2, explaining the fitness of the model, the *F* - statistic, explaining the significance of the correlations of the social capital indices to the questions used to build the indices. The t-test of significance of the enriching educational experience determines the amount of change of the independent variable upon the dependent variable.

Summary

This chapter provided details of the methodology to be used to test the research hypotheses. The participant selection will include all exiting or senior NSSE respondents at a western land grand university of the 2009 survey cohort. Independent variables are the enriching educational experience and self-reported student attributes: Greek organization membership, student-athlete status, demographical information (gender, racial and ethnic information), parental level of education, program of study, and self-reported grade point average. Threats to external validity are difficult to overcome as a single institution is used for this study and as such generalizability is cautioned. However, replicative studies may support any findings of this study. Growth of student social capital will be analyzed using a linear regression with the participation in an

enriching educational experience as the independent variable. Self-reported field of study and grade point average may support reasons for the growth in student social capital. Results of statistical testing will be interpreted, providing information to either accept or reject the null hypotheses.

In the next chapter, study findings will be presented, analyzed and discussed.

Chapter Four: Research Findings

This chapter presents the results of the analysis about the impact of student participation in an enriching educational experience on student social capital at a western land-grant university. The data were collected by the National Survey of Student Engagement for 2009 students. Using IBM SPSS (Version 22), the data were validating for statistical uniformity and heterogeneity of variance using descriptive statistics, correlations, ANOVAs, t-tests, and ordinary least squares regressions. Chapter four is organized into seven sections: hypotheses, population, data analysis, social capital growth, social capital by category, social capital using control variables, with a summary. There are three hypotheses.

Each hypothesis section presents the null hypothesis, the data process testing for statistical normality, descriptive statistics; group means comparisons, within group differences, and the predictive model. The study analyzes the effects of the enriching educational experience on exiting student social capital between two cohorts of students.

Hypotheses

The data analysis presents the null hypotheses, the data process testing for statistical normality, descriptive statistics, group means comparisons, within group differences, and predictive models for each of the three hypotheses. The study analyzes the effects of the enriching educational experience on exiting student social capital between two groups of students.

The hypotheses were tested by using twenty-nine variables from the National Survey of Student Engagement, regarding social capital behaviors as defined by Putnam's (2000) and Spellerberg's (2001) research. These twenty-nine variables were

accumulated into an overall index as well as sorted into categories of social capital: civic, trust, giving, volunteering, participation, and meeting of obligations of friends and family.

Null Hypothesis 1: Social capital growth

At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital between participants and non-participants in an enriching educational experience.

Null Hypothesis 2: Social capital growth by category

At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital by type (civic, trust, volunteering, giving, participation, meeting obligations) between participants and non-participants in an enriching educational experience.

Null Hypothesis 3: Social capital growth by student characteristics

At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital by demographics (Greek membership, parental educational background, race, ethnicity, gender, student-athlete status, program of study, grade point average) between participants and non-participants in an enriching educational experience.

Population

The population consisted of 714 seniors. The NSSE data set consists of survey information from the 2009 survey of students from the western land-grant university. Each cohort contains a student classification code for class status or an unclassified status. Seniors were selected from the 2009 cohort class with a status of 4 (N = 714).

Data Analysis

All twenty-nine variables were used to create the overall social capital index. The twenty-nine variables were normalized to a ten point scale due to different Likert scales, some answers were on a four point scale, a seven point scale, and an eight point scale, the data were normalized to a ten point scale. The overall social capital index was created from the twenty-nine questions, summed, and divided by twenty-nine. The civic, volunteering, and giving indices each had four unique fields, summed, and divided by four. The trust and participation indices each had five different fields, summed, and divided by five. The meeting obligations index had the most fields, seven, summed, and divided by seven.

As a result of calculating descriptive statistics, all the fields were examined for skewness and kurtosis. Eight fields were selected for transformation, five were moderately skewed and three were severely positively skewed. These three severely positively skewed fields never dropped below the 1.0 threshold after inverse transformation. The fields were retained for the currently designed model as three of them were part of the meeting obligations social capital index.

These fields and categories were listed previously in Table 3.1. These calculations were added to the individual records for each student. Of the six categorical

social capital indices, only the civic social capital index did not contain a transformed variable. Trust, volunteering, and giving social capital indices each had one transformed variable. Participation social capital had two transformed variables and meeting obligations had three transformed variables. Homogeneity of variance was established for the demographic variables and social capital indices variables based on the *F* ratio being greater than $p \leq .01$ as generated by the SPSS default test (Levene's Test for Equality of Variance).

Demographics

Table 4.1 lists the demographic, descriptive, and *F* ratio information about the normality of the student data. Homogeneity of variance was established by the Levene's Test usage of the *F* Statistic. Anova *F*-statistic showed significance of difference between dummy variables. Each of these student attributes was recoded as a dummy variable exploring the relationships with student social capital.

Table 4.1 also presents the data comparing the means between variables using the ANOVA. Significant differences in social capital exist between a student with a father's educational background 'did not graduate from high school' and all the other types of educational background. These students, 9.3% of the total, had the highest social capital (5.3308). No other types of educational background were significant ($p < .01$) in this group. A different group, fraternity or sorority members, had 12.6% of the students, with a significant difference in social capital (5.4771) when compared to the other students (4.9004). A third group, students with self-reported grades (C+, B) were significant ($p < .01$) from the other groups of students with self-reported grades. These selected groups of students were all fairly small in number. There was a significant difference in social

capital for Caucasian students ($p < .01$), one of the largest groups.

Table 4.1

Students Descriptive Characteristics and Comparing the Means (ANOVA)

Student Attribute	N	%	Social Capital		ANOVA		
			M	Std Dev	F	η^2	*p*
Father's Education							
Did not graduate from high school	54	9.3	5.3308	(.93)	8.933	.014	.003**
High school graduate	151	24.9	5.0736	(1.02)	2.662	.004	.103
Attended college but did not finish	103	17.1	5.1269	(.81)	3.649	.006	.057
Associate's degree	51	8.2	4.9337	(1.07)	.056	.001	.812
Bachelor's degree	151	23.6	4.8173	(.89)	4.793	.007	.029*
Master's degree	77	11.9	4.7456	(.94)	4.678	.008	.031*
Doctoral degree	34	5.1	4.5933	(.88)	5.520	.009	.019*
Total	621	100.0	4.9640	(.95)	4.480	.042	.001**
Fraternity or Sorority Member – No	558	87.4	4.9004	(.93)			
Fraternity or Sorority Member – Yes	72	12.6	5.4771	(.96)			
Total	630	100.0	4.9663	(.95)	24.500	.038	.001**
Student Athlete – No	603	95.7	4.9555	(.95)			
Student Athlete – Yes	26	4.3	5.2151	(.92)			
Total	629	100.0	4.9663	(.95)	1.870	.003	.172
Self-Reported Grades							
C-or lower	5	0.7	4.2082	(.68)	3.237	.005	.072
C	14	2.2	4.8055	(.87)	.412	.001	.521
C+	23	3.2	4.3380	(.90)	10.654	.017	.001**
B-	42	6.1	4.9225	(.76)	.096	.001	.757
B	129	19.7	4.7670	(.87)	7.250	.011	.007**
B+	115	18.7	5.0854	(1.00)	2.227	.004	.136
A-	147	23.6	5.0255	(.97)	.748	.001	.387
A	155	25.4	5.1318	(.95)	6.320	.010	.012**
Total	630	100.0	4.9663	(.95)	3.928	.042	.001**
Program of Study							
Arts and humanities	96	15.7	5.0382	(.89)	.600	.001	.439
Biological science	89	14.7	5.0846	(1.01)	1.544	.002	.215
Business	67	10.8	4.9520	(.92)	.025	.001	.874
Education	27	4.6	5.2330	(1.06)	2.197	.004	.139

Engineering	62	9.3	4.6357	(.70)	8.675	.014	.003**
Physical Sciences	22	3.6	5.0664	(1.13)	.239	.001	.625
Professional	43	7.1	5.1162	(.80)	1.113	.002	.292
Social Science	109	17.8	5.0328	(1.04)	.595	.001	.441
Other	105	16.4	4.8028	(.91)	3.939	.006	.048*
Total	620	100.0	4.9694	(.96)	2.114	.027	.033*
Gender							
Male	239	37.3	4.8898	(.90)			
Female	392	62.7	5.0083	(.98)			
Total	631	100.0	4.9634	(.95)	2.317	.004	.128
Race and Ethnicity							
Caucasian/White (non – Hispanic)	442	69.1	4.8990	(.92)	6.842	.011	.009**
Hispanic	49	8.6	5.4830	(.98)	16.285	.025	.001**
Asian, Asian American or Pacific Islander	43	7.0	5.0717	(1.04)	.600	.001	.439
American Indian or other Native American	7	1.2	5.2614	(1.09)	.697	.001	.404
African American /Black	12	2.0	5.1842	(.64)	.661	.001	.417
Foreign	12	2.0	5.2658	(.81)	1.240	.002	.266
Other/prefer not to respond	66	10.1	4.8115	(1.03)	1.890	.003	.170
Total	631	100.0	4.9634	(.95)	3.674	.034	.001**

* $p < .05$, ** $p < .01$

Table 4.2 presents the t-test significance between student attribute and student social capital. Significant differences in social capital exist between a student with a father's educational background 'did not graduate from high school' and all other students. These students, 9.3% of the total, had the highest social capital (5.3308). No other group of students was significant ($p < .01$). Fraternity or sorority members, 12.6% of the students, had a significant difference in social capital (5.4771) when compared to the other students (4.9004). Students with self-reported grades (C+, B) were significant ($p < .01$) from the other groups of students. These groups of students were all fairly small in number. There was a significant difference in social capital for Caucasian students ($p < .01$) one of the largest groups.

Table 4.2

T-test for Significance Between Student Attribute and Student Social Capital

	Social Capital				
Student Attribute	M	SD	*t*	df	Sig.(2-tailed)
Father's Education					
Did not graduate from high school	5.3308	(.93)	-2.989	619	.003
High school graduate	5.0736	(1.02)	-1.631	619	.103
Attended college but did not finish	5.1269	(.81)	-1.910	619	.057
Associate's degree	4.9337	(1.07)	.237	619	.812
Bachelor's degree	4.8173	(.89)	2.189	619	.029*
Master's degree	4.7456	(.94)	2.163	619	.031*
Doctoral degree	4.5933	(.88)	2.350	619	.019*
Fraternity or Sorority Member – No	4.9004	(.92)			
Fraternity or Sorority Member – Yes	5.4771	(.96)	-4.950	628	.001**
Student Athlete – No	4.9555	(.95)			
Student Athlete – Yes	5.2151	(.92)	-1.367	627	.172
Self-Reported Grades					
C-or lower	4.2082	(.68)	1.799	628	.072
C	4.8055	(.87)	.642	628	.521
C+	4.3380	(.90)	3.264	628	.001**
B-	4.9225	(.76)	.310	628	.757
B	4.7670	(.87)	2.693	628	.007**
B+	5.0854	(1.00)	-1.492	628	.136
A-	5.0255	(.97)	-.865	628	.387
A	5.1318	(.95)	-2.514	628	.012*
Program of Study					
Arts and humanities	5.0846	(1.02)	-1.242	618	.215
Biological science	5.0846	(1.02)	-1.242	618	.215
Business	4.9520	(.92)	.159	618	.874
Education	5.2330	(1.06)	-1.482	618	.139
Engineering	4.6357	(.70)	2.945	618	.003**
Physical Sciences	5.0664	(1.13)	-.489	618	.625
Professional	5.1162	(.80)	-1.055	618	.292
Social Science	5.0328	(1.04)	-.771	618	.441
Other	4.8028	(.91)	1.985	618	.048*
Gender					

Male	4.8898	(.90)	1.522	629	.128
Female	5.0083	(.98)	-1.522	629	.128
Race and Ethnicity					
Caucasian/White (non – Hispanic)	4.8990	(.92)	2.616	629	.009**
Hispanic	5.4830	(.98)	-4.036	629	.001**
Asian, Asian American or Pacific Islander	5.0717	(1.03)	-.775	439	.439
American Indian or other Native American	5.2614	(1.09)	-.835	629	.404
African American /Black	5.1842	(.64)	-.813	629	.417
Foreign	5.2658	(.81)	-1.114	629	.266
Other/prefer not to respond	4.8115	(1.03)	1.375	629	.170

* $p < .05$, ** $p < .01$

From Table 4.3, Anova *F*-statistic showed significant difference between seven of the eight enriching educational experiences and overall social capital index.

Significant ($p < .01$):

- EEE_1 = practicum, internship, field experience, co-op experience, or clinical assignment
- EEE_2 = community service or volunteer work
- EEE_3 = participate in a learning community or some other formal program where groups of students take two or more classes together
- EEE_4 = work on a research project with a faculty member outside of course or program requirements
- EEE_5 = foreign language coursework
- EEE_6 = study abroad
- EEE_8 = culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.

Table 4.3

Enriching Educational Experience and Student Social Capital, Levene's test for Equality of Variance

Enriching Educational Experience	N	%	Social Capital		Levene's Test	
			M	Std Dev	F	*p*
Internship, Practicum al.						
Non-Participant	158	23.0	4.5546	(.87)	.935	.334
Participant	472	77.0	5.0985	(.95)		
Volunteering and Community Service						
Non-Participant	181	26.4	4.5235	(.85)	1.798	.180
Participant	443	73.6	5.1460	(.94)		
Learning Community						
Non-Participant	465	71.3	4.7745	(.88)	.040	.841
Participant	162	28.7	5.5035	(.93)		
Research with Faculty Outside of Program of Study						
Non-Participant	407	62.7	4.8255	(.89)	4.532	.057
Participant	224	37.3	5.2140	(1.00)		
Foreign Language Coursework						
Non-Participant	278	42.7	4.8112	(.87)	4.532	.034*
Participant	353	57.3	5.0833	(.95)		
Study Abroad						
Non-Participant	474	74.1	4.8612	(.92)	1.394	.238
Participant	153	25.9	5.2719	(.99)		
Independent Study						
Non-Participant	412	65.0	4.9123	(.90)	5.909	.015*
Participant	214	35.0	5.0823	(1.02)		
Culminating Senior Experience						
Non-Participant	85	12.5	4.6137	(.87)	.125	.724
Participant	546	87.5	5.0179	(.95)		

* $p < .05$, ** $p < .01$

Table 4.3 highlights the lack of violated assumptions as the internship analysis was ($F(1,619) = .935$, $p = .334$). There is no significant loss of data normality ($p < .01$) in the relationship between student social capital and student participation in the enriching educational experience with the exception of the independent study. Table 4.4

shows the results of the independent sample t-tests on the enriching educational experience variable. The dependent variable is overall student social capital and the independent variable is the enriching educational experience variable. Each variable is tested independently of the others as the enriching education experience was recoded into eight dummy variables as there are eight different types of experiences. The table also presents the results of the t-test of significant variable between students participating in an enriching educational experience.

There was a significant effect for the internship, practicum, field experiences, and clinical experience ($t(628) = -6.43$, $p < .01$) participants having more social capital than non-participants. The sign is negative because the first mean of non-participants is less than the the second mean of participants. There was a significant effect for the volunteering and community service experience ($t(622) = -7.74$, $p < .01$) participants having more social capital than non-participants. There was a significant effect for the learning community experience ($t(625) = -8.93$, $p < .01$) participants having more social capital than non-participants. There was a significant effect for the research with faculty outside of the program of study experience ($t(629) = -5.01$, $p < .01$) participants having more social capital than non-participants. There was a significant effect for the foreign language coursework experience ($t(629) = -3.61$, $p < .01$) participants having more social capital than non-participants. There was a significant effect for the study abroad experience ($t(625) = -4.72$, $p < .01$) participants having more social capital than non-participants. There was a significant effect for the culminating senior experience ($t(629) = -3.69$, $p < .01$) participants having more social capital than non-participants.

Table 4.4

T-test for Significance Between Enriching Educational Experience and Student Social Capital

Enriching Educational Experience	Social Capital M	SD	*t*	df	Sig.
Internship, Practicum al.					
Non-Participant	4.5546	(.87)	-6.427	628	.001**
Participant	5.0985	(.94)			
Volunteering and Community Service					
Non-Participant	4.5235	(.85)	-7.736	622	.001**
Participant	5.1460	(.94)			
Learning Community					
Non-Participant	4.7745	(.88)	-8.929	625	.001**
Participant	5.5035	(.93)			
Research with Faculty Outside of Program of Study					
Non-Participant	4.8255	(.89)	-5.011	629	.001**
Participant	5.2140	(1.00)			
Foreign Language Coursework					
Non-Participant	4.8112	(.87)	-3.607	629	.001**
Participant	5.0833	(.99)			
Study Abroad					
Non-Participant	4.8612	(.92)	-4.717	625	.001**
Participant	5.2719	(.99)			
Independent Study					
Non-Participant	4.9123	(.90)	-2.136	624	.033*
Participant	5.0703	(1.02)			
Culminating Senior Experience					
Non-Participant	4.6137	(.87)	-3.686	629	.001**
Participant	5.0179	(.95)			

* $p < .05$, ** $p < .01$

The independent variable impacting social capital is the enriching educational experience. Done or planning to do an enriching educational experience is coded to a 1 because of the timing of the NSSE survey during winter and early spring, otherwise a 0

for the dummy variable. Each of the experiences was recoded to a dummy variable in this manner. If a student has not yet begun their final semester which, for many, includes their enriching educational experience, they would not be counted as having the experience and understating the effect of the enriching educational experience.

The sub-group scale for trust social capital consisted of 5 items (α = .795), civic social capital consisted of 4 items (α = .749), volunteering social capital consisted of 4 items (α = .632), participation social capital consisted of 5 items (α =.648), giving social capital consisted of 4 items (α =.825), meeting obligations social capital consisted of 7 items (α =.508), and the overall social capital correlations with the 8 enriching educational experiences (α =.862), in Appendix D.

Social Capital Growth

Following is the first hypothesis testing the impact of the enriching educational experience on participants and their total social capital.

$H0_1$ At the end of the undergraduate program of study, there is no difference in the accumulation of social capital between participants and non-participants in an enriching educational experience.

The independent sample t-test compared the student social capital for the student participating in any type of enriching educational experience or the student does not participate. The results contained in Table 4.3 indicate there are significant differences ($p < .01$) between the group means based on social capital and the participation variables. Significant F test results exist, e.g. internship ($F(1, 619) = .935$, $p = .334$), for all student experiences, except for the independent study. The significance of the t-test ($p < .01$)

shows seven of the eight experiences increased social capital after participation. Therefore, based on these findings the first hypothesis is rejected of no difference.

Social Capital Summary Index. Table 4.5 displays the within groups differences of the dependent variable (social capital) and the independent variable EEE (enriching educational experiences). The results of the eight separate, one-way ANOVAs show that there is a significant difference by type of EEE among the student social capital.

Table 4.5

Analysis of the Variance Among Enriching Educational Experience and Social Capital

Source	SS	df	Mean Square	F	η^2	Sig.
Practicum, Internship, Co-op Experience						
Between	35.018	1	35.018	41.300	.062	.001**
Within	532.478	628	.848			
Total	567.497	629				
Volunteering/Community Service						
Between	49.787	1	49.787	59.853	.088	.001**
Within	517.394	622	.832			
Total	567.181	623				
Learning Community						
Between	63.861	1	63.861	79.727	.113	.001**
Within	500.623	625	.801			
Total	564.483	626				
Research Project						
Between	21.816	1	21.816	25.115	.038	.001**
Within	546.372	629	.869			
Total	568.187	630				
Foreign Language						
Between	11.512	1	11.512	13.008	.020	.001**
Within	556.675	629	.885			
Total	568.187	630				
Study Abroad						
Between	19.508	1	19.508	22.248	.034	.001**
Within	548.041	625	.877			
Total	567.549	626				
Independent Study						
Between	4.073	1	4.073	4.565	.007	.033*
Within	556.779	624	.892			
Total	560.852	625				
Senior Culminating Experience						
Between	12.013	1	12.013	13.586	.021	.001**
Within	556.175	629	.884			
Total	568.187	630				

* $p < .05$, ** $p < .01$

Homogeneity of variance was met by one experience (independent study) and all other types of the enriching educational experience variable show the significance of the variable to social capital (Table 4.6). Due to the homogeneity of the data from the Levene's test (*F* Statistic, $p < .05$ in Table 4.4), it was assumed that the groups are similar enough to make meaningful comparisons. Note the strong *F* statistical significance of difference for the learning community, community service, and the practicum internship variables. As the enriching educational experience variable is limited in choices, any post hoc testing was not performed due to the limitation of a bivariate variable.

Enriching Education Experience and Exiting Student Social Capital. The final analysis of the predictive model for the first hypothesis of the impact of the enriching educational experience on exiting student social capital was the specification of a multiple variable regression model to predict the difference in student social capital. All of the necessary assumptions regarding normalcy of data distribution and homogeneity of variance for the data used in the regression model were tested using the appropriate measures (Green & Salkind, 2003; Mertler & Vannatta, 2001: Sprinthall, 2000) and are reported in the following section. The following equation describes the regression for the first hypothesis (1).

$$ESSC = \alpha + \beta EEE_8^1 + \varepsilon \quad (1)$$

The predictor variables included in the model were defined as:

- EEE_1 = practicum, internship, field experience, co-op experience, or clinical assignment (Intern)
- EEE_2 = community service or volunteer work (*Volntr*)

- EEE_3 = participate in a learning community or some other formal program where groups of students take two or more classes together (*Lrncom*)
- EEE_4 = work on a research project with a faculty member outside of course or program requirements (*Resrch*)
- EEE_5 = foreign language coursework (*Forlng*)
- EEE_6 = study abroad (*Stdabr*)
- EEE_7 = independent study or self-designed major (*Indstd*)
- EEE_8 = culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.(*Snrx*)

The summary statistics from the linear regression analysis conducted with the variables specified above is presented in Table 4.6. The adjusted R^2 value estimated for this model was .211, which means that approximate 21% of the variation in social capital summary index was explained by a linear combination of the eight predictor variables listed above.

Table 4.6

Summary Statistics for Specified Regression Model (Social Capital Index)

Model	*R*	R^2	Adjusted R^2	Std. error of the Estimate
1	.470	.221	.211	.84737

The results of the ANOVA test performed on the model are presented in Table 4.7 and confirm the statistical significance of the specified linear model of the enriching educational experience on exiting student social capital.

Table 4.7

Analysis of Variance Results for specified Regression Model (Social Capital Index)

Model		SS	df	MS	F	Sig.
1	Regression	122.823	8	15.353	21.382	.001**
	Residual	432.256	602	.718		
	Total	555.079	610			

* $p <$ .05, ** $p <$ .01

Table 4.8 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from .020 to .261.

Table 4.8

Bivariate and Partial Correlations of the Predictor Variables with Social Capital Index and the Enriching Educational Experience

Predictors	Correlation between Predictors and Social Capital Summary Index	Correlation between Predictors and Social Capital Summary Index Controlling for all Other Predictors
Practicum, Internship	.134	.119
Community Service	.177	.159
Learning Community	.261	.238
Research with Faculty	.073	.065
Foreign language	.081	.071
Study Abroad	.091	.081
Independent Study	.020	.018
Senior project	.075	.066

Ranking the correlations highlighted the relative importance of the learning community experience. Running the stepwise regression (Appendix E) indicated that the learning community accounted for approximately twelve percent of the variance in exiting student social capital. Community service and volunteering accounted for approximately five percent of the variance. The practicum and internship accounted for two percent of the variance. The other enriching educational experiences accounted for the balance of the variance, between two and three percent.

Given the overall significance of the regression model as demonstrated in Table 4.6, the data listed in Table 4.9 specified the beta or slope weights derived in the analysis for the following equation (4):

$$ESSC = 3.996 + .127\,EEE_1 + .170EEE_2 + .251EEE_3 + .068EEE_4 + .078EEE_5 + .088EEE_6 + .019EEE_7 + .069EEE_8 \quad (4)$$

Table 4.9

Regression Model Coefficients (Social Capital Index)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std Error	β		
Constant	3.996	.114		35.064	.001**
EEE_1 (*Intern*)	.281	.085	.127	3.314	.001**
EEE_2 (*Volntr*)	.358	.081	.170	4.411	.001**
EEE_3 (*Lrncom*)	.548	.083	.251	6.622	.001**
EEE_4 (*Resrch*)	.135	.075	.068	1.794	.073
EEE_5 (*Forlng*)	.150	.075	.075	1.985	.048*
EEE_6 (*Stdabr*)	.194	.086	.088	2.247	.025*
EEE_7 (*Indstd*)	.038	.075	.019	.503	.615
EEE_8 (*Snrx*)	.195	.105	.069	1.847	.065

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 22.1% of the variance ($R^2 = .211$, $F(8,602) = 21.38$, $p < .01$). The test found that participation in the internship significantly predicted increased overall social capital ($\beta = .13$, $p < .01$), participating in the community service significantly predicted increased overall social capital ($\beta = .36$, $p < .01$), and participating in the learning community significantly predicted increased overall social capital ($\beta = .55$, $p < .01$). Given these results, the null hypothesis that the effects of the enriching educational experience on exiting student social capital as signified by the beta or slope weights were not significantly different than zero was rejected.

The second hypothesis builds on the first hypothesis. The six sub-group indices can be considered a more restrictive regression model targeting social capital trends which may be hidden in the overall social capital index. Six regressions are executed, one for each of the sub-group indices of social capital: civic, trust, volunteering, giving, participation, and meeting obligations of family and friends. The second hypothesis regression contains the same independent variables as listed previously and the dependent variable changes for the appropriate sub-group index.

Social Capital by Category

The second hypothesis tests the predictive model for the difference between students participating or not participating in the enriching educational experience for each of the six types of student social capital.

$H0_2$ At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital by type (civic, trust, volunteering,

giving, participation, meeting obligations) between participants and non-participants in an enriching educational experience.

The following equation states the theoretical model used for this hypothesis (2).

$$ESSC_x = \alpha + \beta EEE_8^1 + \varepsilon \quad (2)$$

The dependent variables are the six sub-group indices of social capital for the senior student.

The dependent variables included in the model were defined as:

- $ESSC_1$ = civic social capital
- $ESSC_2$ = trust social capital
- $ESSC_3$ = volunteering social capital
- $ESSC_4$ = giving social capital
- $ESSC_5$ = participation social capital (formal)
- $ESSC_6$ = meeting obligations (informal) of friends and family

The independent predictor variables included in the model were defined are the same as previously described in $H0_1$.

- EEE_1 = practicum, internship, field experience, co-op experience, or clinical assignment (*Intern*)
- EEE_2 = community service or volunteer work (*Volntr*)
- EEE_3 = participate in a learning community or some other formal program where groups of students take two or more classes together (*Lrncom*)
- EEE_4 = work on a research project with a faculty member outside of course or program requirements (*Resrch*)

- EEE_5 = foreign language coursework (*Forlng*)
- EEE_6 = study abroad (*Stdabr*)
- EEE_7 = independent study or self-designed major (*Indstd*)
- EEE_8 = culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc. (*Snrx*)

Civic social capital category. The first sub-category of civic social capital examines whether there is ae significant difference in civic social capital between participants and non-participants. The summary statistics from the linear regression analysis conducted with the previously specified variables ($ESSC_1$, $EEE_{1,8}$) are presented in Table 4.10. The adjusted R^2 value estimated for this model was .179, which means that approximate 18% of the variation in social capital summary index was explained by a linear combination of the eight predictor variables listed above.

Table 4.10

Summary Statistics for Specified Regression Model (Civic Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
1	.435	.189	.179	1.47443

The results of the ANOVA test performed on the model are presented in Table 4.11 and confirmed the statistical significance of the specified linear model of the enriching educational experience on the student civic social capital.

Table 4.11

Analysis of Variance Results for Specified Regression Model (Civic Social Capital)

Model		SS	df	MS	F	Sig.
1	Regression	334.468	8	41.809	19.232	.001**
	Residual	1434.808	660	2.174		
	Total	1769.277	668			

* $p < .05$, ** $p < .01$

Table 4.12 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from .024 to .179.

Table 4.12

Bivariate and Partial Correlations of the Predictor Variables with Civic Social Capital and the Enriching Educational Experience

Predictors	Correlation between Predictors and Civic Social Capital	Correlation between Predictors and Civic Social Capital Controlling for all Other Predictors
Practicum, Internship	.124	.113
Community Service	.153	.139
Learning Community	.179	.164
Research	.090	.081
Foreign language	.105	.095
Study Abroad	.116	.105
Independent study	.024	.021
Senior project	.090	.081

Ranking the correlations highlighted the relative importance of the learning community experience and volunteering. Running the stepwise regression (Appendix E) indicated that volunteering accounted for approximately seven percent of the variance in civic social capital. Learning community accounted for approximately four percent of the variance. Study abroad experience accounted for approximately two percent of the variance. The practicum and internship account for approximately one percent of the variance and the other enriching educational experiences account for the balance of the variance, approximately two percent.

Given the overall significance of the regression model as demonstrated in Table 4.10, the data listed in Table 4.13 specified the beta or slope weights derived in the analysis for the following equation (5):

$$ESSC_1 = 4.077 + .120\,EEE_1 + .149EEE_2 + .172EEE_3 + .086EEE_4 + .103EEE_5 + .114EEE_6 + .022EEE_7 + .085EEE_8 \quad (5)$$

Table 4.13

Regression Model Coefficients (Civic Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std Error	β		
Constant	4.077	.190		21.432	.001**
EEE_1 (*Intern*)	.451	.140	.120	3.215	.001**
EEE_2 (*Volntr*)	.535	.135	.149	3.965	.001**
EEE_3 (*Lrncom*)	.641	.137	.172	4.669	.001**
EEE_4 (*Resrch*)	.290	.125	.086	2.316	.021*
EEE_5 (*Forlng*)	.337	.125	.103	2.702	.007**
EEE_6 (*Stdabr*)	.432	.145	.114	2.987	.003**
EEE_7 (*Indstd*)	.076	.125	.022	.605	.545
EEE_8 (*Snrx*)	.411	.178	.085	2.316	.021*

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 18.9% of the variance ($R^2 = .189$, $F(8,660) = 19.23$, $p < .01$). The test found that participation in the internship significantly predicted increased civic social capital ($\beta = .12$, $p < .01$), in the community service significantly predicted increased civic social capital ($\beta = .15$, $p < .01$), in the learning community significantly predicted increased civic social capital ($\beta = .17$, $p < .01$), in the foreign language studies community significantly predicted increased civic social capital ($\beta = .10$, $p < .01$), and in the studies abroad significantly predicted increased civic social capital ($\beta = .11$, $p < .01$). Given these results, the null hypothesis that the effects of the participating in the enriching educational experience on student civic social capital as signified by the beta or slope weights were not significantly different than zero was rejected.

Trust social capital category. The second sub-category examines whether there is a significant difference in trust social capital between participants and non-participants. Trust social capital is the dependent variable for the next iteration of the second hypothesis testing the predictive model for the impact of the participating in the enriching educational experience on the student trust social capital.

The predictor variables are unchanged from the original model previously described. The dependent variable is changed to student trust social capital **(**$ESSC_2$**)**. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.14. The adjusted R^2 value estimated for this model was .115, which means that approximate 12% of the variation in trust social capital index was explained by a linear combination of the eight predictor variables listed above.

Table 4.14

Summary Statistics for Specified Regression Model (Trust Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
1	.355	.126	.115	1.44802

The results of the ANOVA test performed on the model are presented in Table 4.15 and confirm the statistical significance of the specified linear model of the enriching educational experience on the student trust social capital.

Table 4.15

Analysis of Variance Results for Specified Regression Model (Trust Social Capital)

	Model	SS	df	MS	F	Sig.
1	Regression	200.141	8	25.018	11.932	.001**
	Residual	1390.157	663	2.097		
	Total	1590.298	671			

* $p <$ .05, ** $p <$ .01

Table 4.16 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from .002 to .224.

Table 4.16

Bivariate and Partial Correlations of the Predictor Variables with Trust Social Capital and the Enriching Educational Experience

Predictors	Correlation between Predictors and Trust Social Capital	Correlation between Predictors and Trust Social Capital Controlling for all Other Predictors
Practicum, Internship	.147	.139
Community Service	.036	.034
Learning Community	.224	.215
Research	.016	.015
Foreign language	.007	.006
Study Abroad	.080	.075
Independent study	.002	.002
Senior project	.086	.081

Ranking the correlations highlighted the relative importance of the learning community experience. Running the stepwise regression (Appendix E) indicated that the learning community experience accounted for approximately eight percent of the variance in social capital. Practicum and internship experience accounted for approximately two percent of the variance. The culminating senior experience accounted for approximately one percent of the variance. The study abroad enriching educational experiences accounted for the balance of the variance, approximately one percent.

Given the overall significance of the regression model as demonstrated in Table 4.14, the data listed in Table 4.17 specified the beta or slope weights derived in the analysis for the following equation (6):

$$ESSC_2 = 5.501 + .148\,EEE_1 + .036EEE_2 + .226EEE_3 + .015EEE_4 + .007EEE_5 + .081EEE_6 + .002EEE_7 + .084EEE_8 \quad (6)$$

Table 4.17

Regression Model Coefficients (Trust Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std Error	β		
Constant	5.501	.187		29.491	.001**
EEE_1 (*Intern*)	.522	.137	.148	3.825	.001**
EEE_2 (*Volntr*)	.124	.132	.036	.937	.349
EEE_3 (*Lrncom*)	.797	.135	.226	5.913	.001**
EEE_4 (*Resrch*)	.049	.122	.015	.400	.689
EEE_5 (*Forlng*)	.022	.122	.007	.78	.859
EEE_6 (*Stdabr*)	.291	.142	.081	2.056	.040*
EEE_7 (*Indstd*)	.007	.123	.002	.054	.957
EEE_8 (*Snrx*)	.387	.174	.084	2.222	.027*

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 12.6% of the variance ($R^2 = .126$, $F(8,602) = 11.93$, $p < .01$). The test found that participation in the internship significantly predicted increased trust social capital ($\beta = .15$, $p < .01$) and in the learning community significantly predicted increased trust social capital ($\beta = .23$, $p < .01$). Given these results, the null hypothesis that the effects of the enriching educational experience on trust social capital as signified by the beta or slope weights were not significantly different than zero was rejected.

Volunteering social capital category. The third sub-category examines whether there is a significant difference in volunteering social capital between participants and non-participants. Volunteering social capital is the dependent variable for the next iteration of the second hypothesis testing the predictive model for the impact of the participating in the enriching educational experience on the student volunteering social

capital.

The predictor variables are unchanged from the original model previously described. The dependent variable is changed to student volunteering social capital **(**$ESSC_3$**)**. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.18. The adjusted R^2 value estimated for this model was .186, which means that approximate 19% of the variation in volunteering social capital index was explained by a linear combination of the eight predictor variables previously listed.

Table 4.18

Summary Statistics for Specified Regression Model (Volunteering Social Capital)

Model	R	R^2	Adjusted R^2	Std error of the Estimate
1	.443	.196	.186	1.04701

The results of the ANOVA test performed on the model are presented in Table 4.19 and confirm the statistical significance of the specified linear model of the enriching educational experience on the exiting student volunteering social capital.

Table 4.19

Analysis of Variance Results for Specified Regression Model (Volunteering Social Capital)

Model		SS	df	MS	F	Sig.
1	Regression	174.410	8	21.801	19.888	.001**
	Residual	714.736	652	1.096		
	Total	889.145	660			

* $p < .05$, ** $p < .01$

Table 4.20 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from -.050 to .211.

Table 4.20

Bivariate and Partial Correlations of the Predictor Variables with Volunteering Social Capital and the Enriching Educational Experience

Predictors	Correlation between Predictors and Volunteering Social Capital	Correlation between Predictors and Volunteering Social Capital Controlling for all Other Predictors
Practicum, Internship	.161	.146
Community Service	.137	.124
Learning Community	.211	.194
Research	.138	.125
Foreign Language	-.050	-.045
Study Abroad	.081	.073
Independent Study	.053	.047
Senior project	.076	.068

Ranking the correlations highlighted the relative importance of the learning community. Running the stepwise regression (Appendix E) indicated that the learning community experience accounted for approximately nine percent of the variance in the change in social capital. The practicum and internship experience accounted for approximately four percent of the variance. Community service and volunteering accounted for approximately two percent of the variance. The other enriching educational experiences accounted for the balance of the variance, between one and two percent.

Given the overall significance of the regression model as demonstrated in Table 4.18, the data listed in Table 4.21 specified the beta or slope weights derived in the analysis for the following equation (7).

$$ESSC_3 = 3.041 + .155\,EEE_1 + .132EEE_2 + .204EEE_3 + .133EEE_4 - .049EEE_5 + .079EEE_6 + .049EEE_7 + .071EEE_8 \quad (7)$$

Table 4.21

Regression Model Coefficients (Volunteering Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1	*B*	Std Error	β		
Constant	3.041	.137		22.277	.001**
EEE_1 (*Intern*)	.418	.100	.155	4.168	.001**
EEE_2 (*Volntr*)	.339	.096	.132	3.520	.001**
EEE_3 (*Lrncom*)	.542	.098	.204	5.522	.001**
EEE_4 (*Resrch*)	.319	.089	.133	3.568	.001**
EEE_5 (*Forlng*)	-.114	.089	-.049	-1.276	.202
EEE_6 (*Stdabr*)	.215	.104	.079	2.073	.039*
EEE_7 (*Indstd*)	.120	.089	.049	1.349	.178
EEE_8 (*Snrx*)	.246	.127	.071	1.941	.053

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 19.6% of the variance ($R^2 = .196$, $F(8,652) = 19.89$, $p < .01$). The test found that participation in the internship significantly predicted increased volunteering social capital ($\beta = .16$, $p < .01$), in the community service significantly predicted increased volunteering social capital ($\beta = .13$, $p < .01$), in the learning community significantly predicted increased volunteering social capital ($\beta = .20$, $p < .01$), and participation in the research with faculty outside of the programs of study predicted increased volunteering social capital ($\beta = .13$, $p < .01$). Given these results, the null hypothesis that these effects of the enriching educational experience on volunteering social capital as signified by the beta or slope weights were not significantly different than zero was rejected.

Giving social capital category. The fourth sub-category examines whether there is a significant difference in giving social capital between participants and non-participants. Giving social capital is the dependent variable for the next iteration of the second hypothesis testing the predictive model for the impact of participating in the enriching educational experience on the student giving social capital.

The predictor variables are unchanged from the original model previously described. The dependent variable is changed to student giving social capital **(**$ESSC_4$**)**. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.22. The adjusted R^2 value estimated for this model was .154, which means that approximate 15% of the variation in giving social capital index was explained by a linear combination of the eight predictor variables listed above.

Table 4.22

Summary Statistics for Specified Regression Model (Giving Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
1	.405	.164	.154	1.59331

The results of the ANOVA test performed on the model are presented in Table 4.23 and confirm the statistical significance of the specified linear model of the enriching educational experience on the exiting student giving social capital.

Table 4.23

Analysis of Variance Results for Specified Regression Model (Giving Social Capital)

Model		SS	df	MS	F	Sig.
1	Regression	330.573	8	41.322	16.277	.001*
	Residual	1688.184	665	2.539		
	Total	2018.757	673			

* $p <$ .05, ** $p <$ .01

Table 4.24 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from .016 to .198.

Table 4.24

Bivariate and Partial Correlations of the Predictor Variables with Giving Social Capital and the Enriching Educational Experience

Predictors	Correlation between Predictors and Giving Social Capital	Correlation between Predictors and Giving Social Capital Controlling for all Other Predictors
Practicum, Internship	.032	.029
Community Service	.172	.159
Learning Community	.108	.099
Research	.096	.088
Foreign language	.198	.185
Study Abroad	.100	.092
Independent study	.029	.026
Senior project	.016	.015

Ranking the correlations highlighted the relative importance of the foreign language experience. Running the stepwise regression (Appendix E) indicated that the foreign language experience accounted for approximately seven percent of the variance in giving social capital. Community service and volunteering accounted for approximately five percent of the variance. The other enriching educational experiences accounted for the balance of the variance, between two and three percent.

Given the overall significance of the regression model as demonstrated in Table 4.22, the data listed in Table 4.25 specified the beta or slope weights derived in the analysis for the following equation (8):

$$ESSC_4 = 5.347 + .031EEE_1 + .170EEE_2 + .104EEE_3 + .093EEE_4 + .201EEE_5 + .100EEE_6 + .028EEE_7 + .016EEE_8 \quad (8)$$

Table 4.25

Regression Model Coefficients (Giving Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1	*B*	Std Error	β		
Constant	5.347	.205		26.048	.001**
EEE_1 (*Intern*)	.123	.150	.031	.816	.415
EEE_2 (*Volntr*)	.649	.144	.170	4.497	.001**
EEE_3 (*Lrncom*)	.415	.148	.104	2.802	.013*
EEE_4 (*Resrch*)	.335	.135	.093	2.480	.013*
EEE_5 (*Forlng*)	.703	.135	.201	5.219	.001**
EEE_6 (*Stdabr*)	.406	.156	.100	2.600	.010*
EEE_7 (*Indstd*)	.101	.135	.028	.746	.456
EEE_8 (*Snrx*)	.081	.191	.016	.422	.673

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 16.4% of the variance ($R^2 = .164$, $F(8,665) = 16.28$, $p < .01$). The test was found that participation in the community service significantly predicted increased giving social capital ($\beta = .17$, $p < .01$) and in the foreign language studies predicted increased giving social capital ($\beta = .20$, $p < .01$). Given these results, the null hypothesis that these effects of the enriching educational experience on giving social capital as signified by the beta or slope weights were not significantly different than zero was rejected.

Participation (more formal) social capital category. The fifth sub-category examines whether there is a significant difference in participation social capital between participants and non-participants. Participation social capital is the dependent variable for the next iteration of the second hypothesis testing the predictive model for the impact of the participating in the enriching educational experience on the student trust social

capital.

The predictor variables are unchanged from the original model previously described. The dependent variable is changed to student participation social capital **(**$ESSC_5$**)**. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.26. The adjusted R^2 value estimated for this model was .137, which means that approximate 14% of the variation in social capital summary index was explained by a linear combination of the eight predictor variables listed above.

Table 4.26

Summary Statistics for Specified Regression Model (Participation Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
1	.384	.147	.137	.97055

The results of the ANOVA test performed on the model are presented in Table 4.28 and confirm the statistical significance of the specified linear model of the enriching educational experience on the student participation social capital.

Table 4.27

Analysis of Variance Results for Specified Regression Model (Participation Social Capital)

Model		SS	df	MS	F	Sig.
1	Regression	107.390	8	13.424	14.251	.001**
	Residual	621.698	660	.942		
	Total	729.088	668			

* $p < .05$, ** $p < .01$

Table 4.28 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from .009 to .211.

Table 4.28

Bivariate and Partial Correlations of the Predictor Variables with Participation Social Capital and the Enriching Educational Experience

Predictors	Correlation between Predictors and Participation Social Capital	Correlation between Predictors and Participation Social Capital Controlling for all Other Predictors
Practicum, Internship	.043	.040
Community Service	.211	.199
Learning Community	.190	.179
Research	.076	.070
Foreign language	.027	.025
Study Abroad	.064	.059
Independent study	.009	.008
Senior project	.040	.037

Ranking the correlations highlighted the relative importance of the community service experience Running the stepwise regression (Appendix E) indicated that the volunteering accounted for approximately eight percent of the variance in social capital. Learning community accounted for approximately four percent of the variance. The other enriching educational experiences accounted for the balance of the variance, less than one percent.

Given the overall significance of the regression model as demonstrated in Table 4.26, the data listed in Table 4.29 specified the beta or slope weights derived in the analysis for the following equation (9):

$$ESSC_5 = 2.524 + .042\,EEE_1 + .213EEE_2 + .189EEE_3 + .074EEE_4 + .027EEE_5 + .064EEE_6 + .008EEE_7 + .038EEE_8 \quad (9)$$

Table 4.29

Regression Model Coefficients (Participation Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1	*B*	Std Error	β		
Constant	2.524	.126		20.005	.001**
EEE_1 (*Intern*)	.102	.092	.042	1.108	.268
EEE_2 (*Volntr*)	.492	.089	.213	5.549	.001**
EEE_3 (*Lrncom*)	.450	.091	.189	4.973	.001**
EEE_4 (*Resrch*)	.161	.082	.074	1.954	.051
EEE_5 (*Forlng*)	.056	.082	.027	.683	.495
EEE_6 (*Stdabr*)	.156	.095	.064	1.636	.102
EEE_7 (*Indstd*)	.018	.083	.008	.220	.826
EEE_8 (*Snrx*)	.120	.117	.038	1.023	.306

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 14.7% of the variance ($R^2 = .147$, $F(8,660) = 14.25$, $p < .01$). The test was found that

participation in volunteering/community service significantly predicted increased participation social capital ($\beta = .21$, $p < .01$) and in the learning community significantly predicted increased social capital ($\beta = .19$, $p < .01$). Given these results, the null hypothesis that these effects of the enriching educational experience on volunteering social capital as signified by the beta or slope weights were not significantly different than zero was rejected.

Meeting obligations of friends and family social capital category. The sixth and last sub-category examines whether there is a significant difference in meeting obligations social capital between participants and non-participants. Meeting obligations social capital is the dependent variable for the next iteration of the second hypothesis testing the predictive model for the impact of the participation in the enriching educational experience on the student meeting obligations social capital.

The predictor variables are unchanged from the original model previously described. The dependent variable is changed to meeting obligations of family and friends social capital **(**$ESSC_6$**)**. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.30. The adjusted R^2 value estimated for this model was .046, which means that approximate 5% of the variation in family and friends social capital was explained by a linear combination of the eight predictor variables listed above.

Table 4.30

Summary Statistics for Specified Regression Model (Meeting Obligations, Friends, Family)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
1	.240	.058	.046	.96685

The results of the ANOVA test performed on the model are presented in Table 4.31 and confirm the statistical significance of the specified linear model of the enriching educational experience on the student social capital.

Table 4.31

Analysis of Variance Results for Specified Regression Model (Meeting Obligations, Friends, Family)

	Model	SS	df	MS	F	Sig.
1	Regression	37.322	8	4.665	4.991	.001**
	Residual	608.543	651	.935		
	Total	645.871	659			

* $p <$ .05, ** $p <$ .01

Table 4.32 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from -.031 to .172.

Table 4.32

Bivariate and Partial Correlations of the Predictor Variables with Social Capital Summary Index and the Enriching Educational Experience

Predictors	Correlation between Predictors and Social Capital Summary Index	Correlation between Predictors and Social Capital Summary Index Controlling for all Other Predictors
Practicum, InternshiP	.066	.064
Community Service	.069	.067
Learning Community	.172	.171
Research	-.031	-.030
Foreign language	-.019	-.018
Study Abroad	-.022	-.021
Independent study	.063	.061
Senior project	-.004	-.004

Ranking the correlations highlighted the relative importance of the learning community. Running the stepwise regression (Appendix E) indicated that learning community accounted for approximately four percent of the variance in family and friends social capital. Practicum and internship accounted for the balance of the variance, less than one percent.

Given the overall significance of the regression model as demonstrated in Table 4.30, the data listed in Table 4.33 specified the beta or slope weights derived in the analysis for the following equation (10):

$$ESSC_6 = 3.687 + .068\,EEE_1 + .071EEE_2 + .181EEE_3 - .032EEE_4 - .020EEE_5 - .023EEE_6 + .064EEE_7 - .004EEE_8 \quad (10)$$

Table 4.33

Regression Model Coefficients (Meeting Obligations, Friends and Family)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1	*B*	Std Error	β		
Constant	3.687	.126		29.176	.001**
EEE_1 (*Intern*)	.155	.092	.068	1.678	.094
EEE_2 (*Volntr*)	.156	.089	.071	1.757	.079
EEE_3 (*Lrncom*)	.407	.091	.181	4.486	.001**
EEE_4 (*Resrch*)	-.066	.083	-.032	-.795	.427
EEE_5 (*Forlng*)	-.039	.083	-.020	-.474	.635
EEE_6 (*Stdabr*)	-.053	.095	-.023	-.560	.576
EEE_7 (*Indstd*)	.132	.082	.064	1.603	.109
EEE_8 (*Snrx*)	-.012	.118	-.004	-.098	.922

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 5.8% of the variance ($R^2 = .058$, $F(8,651) = 4.99$, $p < .01$). The test found that participation in the learning community significantly predicted increased meeting obligations social capital ($\beta = .18$, $p < .01$). Given these results, the null hypothesis that these effects of the enriching educational experience on family and friends social capital as signified by the beta or slope weights were not significantly different than zero was rejected. This is the only EEE experience and social capital sub-group index in which there appears to be a minimal impact of the EEE factor. The learning community is so significant in comparison to other factors that the results support that the hypothesis is not significantly different from zero was rejected.

The third hypothesis builds upon the first two hypotheses through the addition of controlling student attribute variables: fraternity or sorority membership, student athlete

status, Greek membership, parental educational background, race and ethnicity, gender, program of study, and self-reported grade point average.

Social Capital Controlling Variables

The third hypothesis evaluates the impact of participation in the enriching educational experience controlling for student attributes on student social capital.

$H0_3$ At the end of the undergraduate program of study, there is no significant difference in the accumulation of social capital by category by specific student characteristics (Greek membership, parental educational background, race, ethnicity, gender, student-athlete status, program of study, grade point average) between participants and non-participants in an enriching educational experience.

The following equation (3) shows the theoretical modifications.

$$ESSC = \alpha + \beta EEE_8^1 + \beta SA_x + \varepsilon \qquad (3)$$

The dependent variable was the overall social capital index for the exiting student.

The dependent variables included in the model were defined as:

- $ESSC$ = exiting student social capital

The independent predictor variables included in the model were defined are the same as previously described in $H0_1$.

- EEE_1 = practicum, internship, field experience, co-op experience, or clinical assignment (*Intern*)
- EEE_2 = community service or volunteer work (*Volntr*)
- EEE_3 = participate in a learning community or some other formal program where groups of students take two or more classes together (*Lrncom*)

- EEE_4 = work on a research project with a faculty member outside of course or program requirements (*Resrch*)
- EEE_5 = foreign language coursework (*Forlng*)
- EEE_6 = study abroad (*Stdabr*)
- EEE_7 = independent study or self-designed major (*Indstd*)
- EEE_8 = culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc. (*Snrx*)

Student information was coded as student attributes (SA_X) and listed as:

- SA_1 = fraternity or sorority membership (fratsoro)
- SA_2 = student athlete status (*athlete*)
- SA_3 = parental education (father's) (*educ*)
- SA_4 = gender (*gender*)
- SA_5 = race and ethnicity (*ethnicity*)
- SA_6 = self-reported grades (*grades*)
- SA_7 = program of study (*program*)

Fraternity or Sorority Membership. The first regression for the third hypothesis, the additive predictor variable included in the model was:

- *Fratsoro* = dummy variable coded as 1 to hold constant fraternity or sorority status

Note the dependent variable will be the overall social capital index, not the six sub-group indices for the third hypothesis. The summary statistics from the linear regression

analysis conducted with the variables specified above are presented in Table 4.34. The adjusted R^2 value estimated for this model was .219, which means that approximate 22% of the variation in difference in social capital index was explained by a linear combination of the fraternity or sorority variable and the eight EEE predictor variables listed above.

Table 4.34

Summary Statistics for Specified Regression Model (Fraternity or Sorority Membership)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
1	.480	.231	.219	.84283

The results of the ANOVA test performed on the model are presented in Table 4.35 and confirm the statistical significance of the specified linear model of the fraternity or sorority membership variable regressed on the change in student social capital.

Table 4.35

Analysis of Variance Results for Specified Regression Model (Fraternity or Sorority Membership)

Model	SS	df	MS	F	Sig.
1 Regression	128.150	9	14.239	20.0	.001*
Residual	426.929	601	.710		
Total	555.079	610			

* $p < .05$, ** $p < .01$

Table 4.36 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative

impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from .014 to .253.

Table 4.36

Bivariate and Partial Correlations of the Predictor Variables with Social Capital Summary Index and the Enriching Educational Experience

Predictors	Correlation between Predictors and Social Capital Summary Index	Correlation between Predictors and Social Capital Summary Index Controlling for all Other Predictors
Practicum, Internship	.139	.123
Community Service	.158	.141
Learning Community	.253	.229
Research	.065	.057
Foreign language	.084	.074
Study Abroad	.090	.079
Independent study	.014	.013
Senior project	.074	.065
FratSoro	.111	.098

Ranking the correlations highlighted the relative importance of the learning community. Running the stepwise regression (Appendix E) indicated that the learning community indicator accounted for approximately ten percent of the variance in exiting student social capital. Volunteering accounted for approximately five percent of the variance. Foreign language accounted for approximate two percent with one percent for internship and fraternity or sorority membership.

Given the overall significance of the regression model as demonstrated in Table 4.34, the data listed in Table 4.37 specified the beta or slope weights derived in the analysis for the following equation (11):

$$ESSC = 3.997 + .131EEE_1 + .152EEE_2 + .242EEE_3 + .061EEE_4 + .081EEE_5 + .086EEE_6 + .013EEE_7 + .067EEE_8 + .101SA_1 \quad (11)$$

Table 4.37

Regression Model Coefficients (Fraternity or Sorority Membership)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std Error	β		
Constant	3.997	.113		35.262	.001**
EEE_1 (*Intern*)	.291	.084	.131	3.439	.001**
EEE_2 (*Volntr*)	.322	.082	.152	3.928	.001**
EEE_3 (*Lrncom*)	.529	.083	.242	6.398	.001**
EEE_4 (*Resrch*)	.120	.075	.061	1.598	.110
EEE_5 (*Forlng*)	.155	.075	.081	2.073	.039*
EEE_6 (*Stdabr*)	.189	.086	.086	2.058	.028*
EEE_7 (*Indstd*)	.026	.075	.013	.350	.726
EEE_8 (*Snrx*)	.190	.105	.067	1.808	.071
SA_1 (*Fratsoro*=Yes)	.300	.110	.101	2.738	.006**

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 23.1% of the variance ($R^2 = .231$, $F(9,601) = 20.0$, $p < .01$). The test found that participation in the internship significantly predicted increased overall social capital ($\beta = .13$, $p < .01$), in the community service significantly predicted increased overall social capital ($\beta = .15$, $p < .01$), in the learning community significantly predicted increased overall social capital ($\beta = .24$, $p < .01$), and fraternity or sorority membership predicted increased overall social capital ($\beta = .10$, $p < .01$). Given these results, the null hypothesis that these effects of the fraternity or sorority membership and the enriching educational experience on social capital as signified by the beta or slope weights were not significantly different than zero

was rejected. The impact of fraternity or sorority membership followed in significant after the learning community, volunteering, and practicum and internship.

Student Athlete Status. For the second regression, the additive predictor variable included in the model was:

- Athlete = dummy variable coded as 1 to hold for student athlete status

Note the dependent variable will be the overall social capital index, not the six sub-group indices for the third hypothesis. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.38. The adjusted R^2 value estimated for this model was .210, which means that approximate 21% of the variation in social capital summary index was explained by a linear combination of the student athlete variable and the eight EEE predictor variables listed above.

Table 4.38

Summary Statistics for Specified Regression Model (Student Athlete)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
	.471	.222	.210	.84840

The results of the ANOVA test performed on the model are presented in Table 4.39 and confirm the statistical significance of the specified linear model of the fraternity or sorority membership variable regressed on the change in student social capital and confirm the statistical significance of the specified linear model.

Table 4.39

Analysis of Variance Results for Specified Regression Model (Student Athlete)

	Model	SS	df	MS	F	Sig.
1	Regression	123.210	9	13.690	19.020	.001*
	Residual	431.868	600	.720		
	Total	555.078	609			

* $p <$ .05, ** $p <$ .01

Table 4.40 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from .021 to .26.

Table 4.40

Bivariate and Partial Correlations of the Predictor Variables with Social Capital Summary Index and the Enriching Educational Experience

Predictors	Correlation between Predictors and Social Capital Summary Index	Correlation between Predictors and Social Capital Summary Index Controlling for all Other Predictors
Practicum, Internship	.133	.118
Community Service	.175	.157
Learning Community	.261	.238
Research	.072	.064
Foreign language	.080	.070
Study Abroad	.091	.080
Independent study	.021	.019
Senior project	.074	.066
Athlete	.030	.026

Ranking the correlations highlighted the relative importance of the learning community. Running the stepwise regression (Appendix E) indicated that the learning community indicator accounted for approximately eleven percent of the variance in social capital. Volunteering accounted for approximately five percent. Foreign language and practicum and internship accounted for approximately one percent a piece. The other senior experience and study abroad accounted for the balance of the variance. Student athlete status is not significant.

Given the overall significance of the regression model as demonstrated in Table 4.38, the data listed in Table 4.41 specified the beta or slope weights derived in the analysis for the following equation (13):

$$ESSC = 3.998 + .126\,EEE_1 + .168EEE_2 + .251EEE_3 + .067EEE_4 + .077EEE_5 + .087EEE_6 + .019EEE_7 + .068EEE_8 + .027SA_2 + \varepsilon \quad (12)$$

Table 4.41

Regression Model Coefficients (Student Athlete)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std Error	β		
Constant	3.998	.114		35.020	.001*
Intern	.279	.085	.126	3.283	.001*
Volntr	.355	.082	.168	4.350	.001*
Lrncom	.550	.083	.251	6.610	.001*
Resrch	.133	.075	.067	1.768	.078
Forlng	.148	.076	.077	1.954	.051
Stdabr	.193	.086	.087	2.231	.026*
Indstd	.039	.075	.019	.514	.607
Snrx	.192	.106	.068	1.819	.069
Athlete=Yes	.133	.181	.027	.733	.464

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 22.2% of the variance ($R^2 = .222$, F (9,600) = 19.02, $p < .01$). The test found that participation in the internship significantly predicted increased social capital ($\beta = .13$, $p < .01$), in the community service significantly predicted increased social capital ($\beta = .17$, $p < .01$), and in the learning community significantly predicted increased social capital ($\beta = .25$, $p < .01$). Given these results, the null hypothesis that these effects of the student athlete status and the enriching educational experience on social capital as signified by the beta or slope weights were not significantly different than zero was rejected. The impact of student athlete status was not as significant as much as the practicum and internship, the learning community, and the cumulating senior experience. It may be based more on the small percentage of the student population with these characteristics.

Parental Education (Father). For the third regression, the additive predictor variable included in the model was:

- Parental education

Note the dependent variable will be the overall social capital index, not the six sub-group indices for the third hypothesis. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.42. The adjusted R^2 value estimated for this model was .240, which meant that approximate 24% of the variation in social capital summary index was explained by a linear combination of the parental education (father's) variable and the eight EEE predictor variables listed above.

Table 4.42

Summary Statistics for Specified Regression Model (Parental Education)

Model	R	R^2	Adjusted R^2	Std error of the Estimate
	.501	.251	.240	.83312

The results of the ANOVA test performed on the model are presented in Table 4.43 and confirm the statistical significance of the specified linear model of the parental education (father) variable regressed on the change in student social capital and confirm the statistical significance of the specified linear model.

Table 4.43

Analysis of Variance Results for Specified Regression Model

	Model	SS	df	MS	F	Sig.
1	Regression	138.192	9	15.355	22.122	.001*
	Residual	411.595	593	.694		
	Total	549.787	602			

* $p <$ .05, ** $p <$ .01

Table 4.44 contains the estimates of the bivariate and partial correlations for the parental education (father) predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from -.198 to .256.

Table 4.44

Bivariate and Partial Correlations of the Predictor Variables with Social Capital Summary Index and the Enriching Educational Experience

Predictors	Correlation between Predictors and Social Capital Summary Index	Correlation between Predictors and Social Capital Summary Index Controlling for all Other Predictors
Practicum, Internship	.136	.119
Community Service	.169	.149
Learning Community	.256	.229
Research	.080	.069
Foreign language	.073	.063
Study Abroad	.112	.098
Independent study	-.001	-.001
Senior project	.078	.068
Parental education-father's	-.198	-.175

Ranking the correlations highlighted the relative importance of the learning community. Running the stepwise regression (Appendix E) indicated that the learning community indicator accounted for approximately eleven percent of the variance in social capital. Volunteering accounted for approximately five percent. Father's education accounted for about three percent, the third most important variable. Study abroad, internship, foreign language, and research accounted for the balance, approximately two percent of the variance.

Given the overall significance of the regression model as demonstrated in Table 4.42, the data are listed in Table 4.45 specified the beta or slope weights derived in the analysis for the following equation (13):

$$ESSC = 4.376 + .127\,EEE_1 + .159EEE_2 + .242EEE_3 + .073EEE_4 + .069EEE_5 + .107EEE_6 - .001EEE_7 + .071EEE_8 - .177SA_3 \quad (13)$$

Table 4.45

Regression Model Coefficients (Parental Education)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1	*B*	Std Error	β		
Constant	4.376	.136		32.257	.001*
Intern	.281	.084	.127	3.355	.001*
Volntr	.337	.080	.159	4.180	.001*
Lrncom	.529	.082	.242	6.457	.001*
Resrch	.145	.075	.073	1.950	.052
Forlng	.133	.075	.069	1.780	.076
Stdabr	.236	.086	.107	2.755	.006*
Indstd	-.002	.075	-.001	-.028	.978
Snrx	.201	.105	.071	1.917	.056
Educ	-.096	.019	-.177	-4.914	.001*

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 25.1% of the variance ($R^2 = .251$, $F(9,593) = 22.12$, $p < .01$). The test found that participation in the internship significantly predicted increased overall social capital ($\beta = .13$, $p < .01$), in the community service significantly predicted increased overall social capital ($\beta = .16$, $p < .01$), in the learning community significantly predicted increased overall social capital ($\beta = .24$, $p < .01$), and the impact of father's education predicted decreased overall social capital ($\beta = -.10$, $p < .01$). Given these results, the null hypothesis that these effects of the parental educational background (fathers) and the enriching educational experience on social capital as signified by the beta or slope weights were not significantly different than zero was rejected. Running the regression with the educational background variable

coded as unique dummy variables revealed significance variation between fathers with degrees and fathers without degrees on social capital (Appendix E).

Gender. For the fourth regression, the additive predictor variable included in the model was:

- Gender

Note the dependent variable will be the overall social capital index, not the six sub-group indices for the third hypothesis. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.46. The adjusted R^2 value estimated for this model was .210, which means that approximate 21% of the variation in social capital summary index was explained by a linear combination of the gender variable and the eight EEE predictor variables listed above.

Table 4.46

Summary Statistics for Specified Regression Model (Gender-Male)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
	.470	.221	.210	.84803

The results of the ANOVA test performed on the model are presented in Table 4.47 and confirm the statistical significance of the specified linear model of the gender variable regressed on the change in student social capital and confirm the statistical significance of the specified linear model.

Table 4.47

Analysis of Variance Results for Specified Regression Model (Gender)

	Model	SS	df	MS	F	Sig.
1	Regression	122.871	9	13.652	18.984	.001*
	Residual	432.207	601	.719		
	Total	555.079	610			

* $p <$ .05, ** $p <$ .01

Table 4.48 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from .011 to .261.

Table 4.48

Bivariate and Partial Correlations of the Predictor Variables with Social Capital Summary Index and the Enriching Educational Experience (Gender)

Predictors	Correlation between Predictors and Social Capital Summary Index	Correlation between Predictors and Social Capital Summary Index Controlling for all Other Predictors
Practicum, Internship	.133	.119
Community Service	.175	.157
Learning Community	.261	.238
Research	.073	.064
Foreign language	.081	.072
Study Abroad	.091	.081
Independent study	.021	.019
Senior project	.074	.065
Gender	.011	.009

Ranking the correlations highlighted the relative importance of the learning community. Running the stepwise regression (Appendix E) indicated that the learning community indicator accounted for approximately eleven percent of the variance in social capital. Volunteering accounted for approximately five percent of the variance. Foreign language, internship, study abroad, and senior experience accounted for the balance of the variance. Gender is not significant.

Given the overall significance of the regression model as demonstrated in Table 4.46, the data were listed in Table 4.49 specified the beta or slope weights derived in the analysis for the following equation (14):

$$ESSC = 3.986 + .127\,EEE_1 + .172EEE_2 + .251EEE_3 + .068EEE_4 + .079EEE_5 + .088EEE_6 + .020EEE_7 + .068EEE_8 + .010SA_4 \quad (14)$$

Table 4.49

Regression Model Coefficients (Gender)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std Error	β		
Constant	3.986	.119		33.360	.001**
Intern	.280	.085	.127	3.300	.001**
Volntr	.363	.083	.172	4.366	.001**
Lrncom	.548	.083	.251	6.621	.001**
Resrch	.134	.075	.068	1.786	.075
Forlng	.151	.076	.079	1.997	.046*
Stdabr	.195	.086	.088	2.252	.025*
Indstd	.039	.075	.020	.524	.601
Snrx	.192	.106	.068	1.818	.070
Gender	.019	.073	.010	.259	.796

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 22.1% of the variance ($R^2 = .221$, $F(9,601) = 18.98$, $p < .01$). The test found that participation in the internship significantly predicted increased social capital ($\beta = .13$, $p < .01$), in the community service significantly predicted increased social capital ($\beta = .17$, $p < .01$), and in the learning community significantly predicted increased social capital ($\beta = .25$, $p < .01$). Given these results, the null hypothesis that these effects of the gender and the enriching educational experience on social capital as signified by the beta or slope weights were not significantly different than zero was rejected.

Race and Ethnicity. For the fifth regression, the additive predictor variable included in the model was:

- Race and Ethnicity

Note the dependent variable will be the overall social capital index, not the six sub-group indices for the third hypothesis. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.50. The adjusted R^2 value estimated for this model was .210, which mean that approximate 21% of the variation in social capital summary index was explained by a linear combination of the student's race and ethnicity variable plus the eight EEE predictor variables listed above.

Table 4.50

Summary Statistics for Specified Regression Model (Race and Ethnicity)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
1	.470	.221	.210	.84806

The results of the ANOVA test performed on the model are presented in Table 4.51 and confirm the statistical significance of the specified linear model of the race and ethnicity variable regressed on the change in student social capital.

Table 4.51

Analysis of Variance Results for Specified Regression Model (Race and Ethnicity)

Model	SS	df	MS	F	Sig.
Regression	122.832	9	13.648	18.976	.001*
Residual	432.246	601	.719		
Total	555.079	610			

* $p < .05$, ** $p < .01$

Table 4.52 contains the estimates of the bivariate and partial correlations for each of the predictor variables used in the regression model and are indicators of the relative

impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from -.005 to .260.

Table 4.52

Bivariate and Partial Correlations of the Predictor Variables with Social Capital Summary Index and the Enriching Educational Experience

Predictors	Correlation between Predictors and Social Capital Summary Index	Correlation between Predictors and Social Capital Summary Index Controlling for all Other Predictors
Practicum, Internship	.134	.119
Community Service	.176	.158
Learning Community	.260	.238
Research	.073	.064
Foreign language	.081	.071
Study Abroad	.091	.081
Independent study	.021	.018
Senior project	.075	.066
Race and ethnicity	-.005	-.004

Ranking the correlations highlighted the relative importance of the learning community. Running the stepwise regression (Appendix E) indicated that the learning community indicator accounted for approximately eleven percent of the variance in social capital. Volunteering accounted for approximately five percent of the variance. Foreign language accounted for approximately two percent. The internship, study abroad, and other senior experience accounted for the balance of the variance. Race and ethnicity is not significant.

Given the overall significance of the regression model as demonstrated in Table 4.50, the data listed in Table 4.53 specified the beta or slope weights derived in the analysis for the following equation (15):

$$ESSC = 4.007 + .127\,EEE_1 + .169EEE_2 + .251EEE_3 + .068EEE_4 + .078EEE_5 + .088EEE_6 + .019EEE_7 + .069EEE_8 - .004SA_5 \quad (15)$$

Table 4.53

Regression Model Coefficients (Race and Ethnicity)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std Error	β		
Constant	4.007	.149		26.943	.001**
Intern	.281	.085	.127	3.307	.001**
Volntr	.358	.081	.169	4.391	.001**
Lrncom	.548	.083	.251	6.610	.001**
Resrch	.135	.075	.068	1.789	.074
Forlng	.150	.075	.078	1.986	.047*
Stdabr	.194	.086	.088	2.246	.025*
Indstd	.038	.075	.019	.503	.615
Snrx	.195	.105	.069	1.847	.065
Race and ethnicity	-.002	.020	-.004	-.116	.908

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 22.1% of the variance ($R^2 = .221$, $F(9,601) = 18.98$, $p < .01$). The test was found that participation in the internship significantly predicted increased overall social capital ($\beta = .13$, $p < .01$), in the community service significantly predicted increased overall social capital ($\beta = .17$, $p < .01$), and in the learning community significantly predicted increased overall social capital ($\beta = .25$, $p < .01$). Given these results, the null hypothesis that these effects of the race and ethnicity and the enriching educational experience on social capital as signified

by the beta or slope weights were not significantly different than zero was rejected. The last two regressions estimate the importance of the program of study and self-reported grades.

Self-Reported Grades. For the sixth regression, the additive predictor variable included in the model was:

- Self-reported Grades

Note the dependent variable will be the overall social capital index, not the six sub-group indices for the third hypothesis. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.54. The adjusted R^2 value estimated for this model was .230, which means that approximate 23% of the variation in social capital summary index was explained by a linear combination of the self-reported grades variable and the eight EEE predictor variables listed above.

Table 4.54

Summary Statistics for Specified Regression Model (Self-reported Grades)

Model	*R*	R^2	Adjusted R^2	STD. error of the Estimate
	.491	.241	.230	.83718

The results of the ANOVA test performed on the model are presented in Table 4.56 and confirm the statistical significance of the specified linear model of the self-reported grades variable regressed on the change in student social capital.

Table 4.55

Analysis of Variance Results for Specified Regression Model (Self-reported Grades)

Model		SS	df	MS	F	Sig.
1	Regression	133.852	9	14.872	21.220	.001*
	Residual	421.226	601	.701		
	Total	555.079	610			

* $p < .05$, ** $p < .01$

Table 4.56 contains the estimates of the bivariate and partial correlations for the predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from .027 to .271.

Table 4.56

Bivariate and Partial Correlations of the Predictor Variables with Social Capital Summary Index and the Enriching Educational Experience (Self-reported Grades)

Predictors	Correlation between Predictors and Social Capital Summary Index	Correlation between Predictors and Social Capital Summary Index Controlling for all Other Predictors
Practicum, Internship	.127	.111
Community Service	.175	.155
Learning Community	.271	.245
Research	.064	.056
Foreign language	.085	.074
Study Abroad	.079	.069
Independent study	.027	.024
Senior project	.067	.059
Self-Reported Grades	.160	.141

Ranking the correlations highlighted the relative importance of the learning community. Running the stepwise regression (Appendix E) indicated that the learning community indicator accounted for approximately eleven percent of the variance in social capital. Volunteering accounted for approximately five percent of the variance. Self-reported grades accounted for approximately three percent of the variance in third place. Foreign language and the practicum and internship accounted for the balance of the variance.

Given the overall significance of the regression model as demonstrated in Table 4.54, the data listed in Table 4.57 specified the beta or slope weights derived in the analysis for the following equation (16):

$$ESSC = 3.510 + .119\,EEE_1 + .165EEE_2 + .259EEE_3 + .059EEE_4 + .081EEE_5 + .076EEE_6 + .025EEE_7 + .061EEE_8 + .143SA_6 \quad (16)$$

Table 4.57

Regression Model Coefficients (Self-reported Grades)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1	*B*	Std Error	β		
Constant	3.510	.166		21.092	.001**
Intern	.263	.084	.119	3.314	.002**
Volntr	.349	.080	.165	4.353	.001**
Lrncom	.565	.082	.259	6.897	.001**
Resrch	.117	.074	.059	1.574	.116
Forlng	.155	.074	.081	2.086	.037*
Stdabr	.167	.086	.076	1.951	.052
Indstd	.049	.074	.025	.663	.508
Snrx	.172	.104	.061	1.652	.099
Grades	.085	.022	.143	3.967	.001**

* $p <$ .05, ** $p <$ .01

The results of the regression indicated that the eight predictors explained 24.1% of the variance ($R^2 = .241$, $F(9,601) = 21.22$, $p < .01$). The test found that participation in the internship significantly predicted increased overall social capital ($\beta = .12$, $p < .01$), in the community service significantly predicted increased social capital ($\beta = .17$, $p < .01$), in the learning community significantly predicted increased social capital ($\beta = .26$, $p < .01$), and the self-reported grades significantly predicted increased overall social capital ($\beta = .14$, $p < .01$). Given these results, the null hypothesis that these effects of the self-reported grades and the enriching educational experience on social capital as signified by the beta or slope weights were not significantly different than zero was rejected. Unlike most of the student attributes, the self-reported grades were the third highest significant variable following the participation in a learning community and volunteering.

Program of Study. For the seventh and last regression, the additive predictor variable included in the model was:

- Program of Study

Note the dependent variable will be the overall social capital index, not the six sub-group indices for the third hypothesis. The summary statistics from the linear regression analysis conducted with the variables specified above are presented in Table 4.58. The adjusted R^2 value estimated for this model was .212, which meant that approximate 21% of the variation in social capital summary index was explained by a linear combination of the program of study variable and the eight EEE predictor variables listed above.

Table 4.58

Summary Statistics for Specified Regression Model (Program of Study)

Model	*R*	R^2	Adjusted R^2	STD. error of the Estimate
1	.473	.224	.212	.84464

The results of the ANOVA test performed on the model are presented in Table 4.59 and confirm the statistical significance of the specified linear model of the fraternity or sorority membership variable regressed on the change in student social capital and confirm the statistical significance of the specified linear model.

Table 4.59

Analysis of Variance Results for Specified Regression Model (Program of Study)

	Model	SS	df	MS	F	Sig.
1	Regression	121.822	9	13.536	18.973	.001*
	Residual	422.339	592	.713		
	Total	544.161	601			

* $p <$ .05, ** $p <$ .01

Table 4.60 contains the estimates of the bivariate and partial correlations for the gender dummy variable (female=yes) predictor variables used in the regression model and are indicators of the relative impact of each independent variable on the criterion variable. The correlation values between the predictor variables, estimated as part of the linear regression analysis, indicated that they were not highly correlated as values ranged from -.034 to .257.

Table 4.60

Bivariate and Partial Correlations of the Predictor Variables with Social Capital Summary Index and the Enriching Educational Experience (Program of Study)

Predictors	Correlation between Predictors and Social Capital Summary Index	Correlation between Predictors and Social Capital Summary Index Controlling for all Other Predictors
Practicum, Internship	.137	.122
Community Service	.176	.158
Learning Community	.257	.234
Research	.073	.065
Foreign language	.083	.074
Study Abroad	.091	.081
Independent study	.019	.016
Senior project	.081	.072
Program of Study	-.034	-.030

Ranking the correlations highlighted the relative importance of the learning community. Running the stepwise regression (Appendix E) indicated that the learning community indicator accounted for approximately eleven percent of the variance in social capital. Volunteering experience accounted for approximately five percent of the variance. The program of study was the third most important variable accounting accounted for three percent of the variance of student social capital. The foreign language, internship, other senior experience and study abroad accounted for the balance of the variance. Program of study is not significant.

Given the overall significance of the regression model as demonstrated in Table 4.58, the data listed in Table 4.61 specified the beta or slope weights derived in the analysis for the following equation (17):

$$ESSC = 4.032 + .131EEE_1 + .169EEE_2 + .247EEE_3 + .068EEE_4 + .080EEE_5 + .088EEE_6 + .017EEE_7 + .075EEE_8 - .030SA_6 \quad (17)$$

Table 4.61

Regression Model Coefficients (Program of Study)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
1	*B*	Std Error	β		
Constant	4.032	.134		30.064	.001**
Intern	.287	.085	.131	3.730	.001**
Volntr	.355	.082	.169	4.357	.001**
Lrncom	.537	.083	.247	6.464	.001**
Resrch	.135	.075	.068	1.793	.073
Forlng	.154	.076	.080	2.030	.043*
Stdabr	.193	.087	.088	2.224	.027*
Indstd	.034	.075	.017	.453	.651
Snrx	.212	.107	.075	1.983	.048*
majrpcol	-.010	.012	-.030	-.818	.414

* $p < .05$, ** $p < .01$

The results of the regression indicated that the eight predictors explained 22.4% of the variance ($R^2 = .224$, $F(9,592) = 18.97$, $p < .01$). The test was found that participation in the internship significantly predicted increased social capital ($\beta = .13$, $p < .01$), in the community service significantly predicted increased social capital ($\beta = .17$, $p < .01$), in the learning community significantly predicted increased social capital ($\beta = .25$, $p < .01$). Given these results, the null hypothesis that these effects of the program of study and the enriching educational experience on social capital as signified by the beta or slope weights were not significantly different than zero was rejected.

Summary

This chapter presented and analyzed the study data. Three null hypotheses were given and analysis was presented to determine the effects of the enriching educational experience variables on exiting student social capital at a western land-grant university, using descriptive, inferential, and ordinary least squares regression statistics.

The analysis indicates that participation in the enriching engagement experience increases social capital. It is significant and noteworthy that the learning community, where a group of students take multiple classes together, holds a significant relationship with all of the interpretive variables. It appears that various student attributes (gender, race-ethnicity, and student-athlete) have little impact on social capital with the exception of fraternity or sorority membership and self-reported grades. The significance of these relationships, based on these findings, supports the importance of student participation in the enriching engagement process. This importance will be discussed further in the final chapter.

Chapter Five: Summary, Discussion, and Recommendations

This chapter presents the research summary, and implications for further research. The first section summarizes the study. The next section discusses the three hypotheses with the associated findings for each. The final section provides implications and recommendations for future research.

Summary of the Study

This exploratory study examines the importance of student participation in the enriching educational experience as a contributor to student social capital. The results may add to the research on student engagement and student social capital as a tool preparing students for life after the completion of their program of study in post-secondary education, yet more investigation is warranted.

Studies found in the literature review to which these results may contribute additional insight are listed below:

- Putnam (2000) proposed that to reverse the decline in community social capital, there must be informal associations among the various people in a community helping to bridge important functions such as education with structured activities.
- D'Agostino's (2010) research findings significantly supported that student's completion of a service-learning program increased social capital, trust and networking indices.
- McMahon's (2010) research findings support the investment in education usually resulted in increased earnings and employment benefits, a productive use of time at home, in the community, and on the job.

- Kuh, Kinzie, Buckley, Bridges, and Hayek (2008) and Wells (2008) research results reported that student engagement increased successful program completion.
- Pascarella and Terenzini (2005) summarized that studies at the postsecondary level positively associated social capital with the valuable resources accessed through social networks and extracurricular activities, service groups, fraternal groups, intramural teams and were associated with developing career-relevant skills.
- Astin (1993), Kuh and Hu (2001), and Pascarella and Terenzini (1991) research suggested that student contact with faculty outside of the classroom promoted and supported student persistence and completion.
- Hauser (2000) studied academic abilities and concluded that education's effect on social capital exceeded student verbal and quantitative abilities.
- Brand (2010) projected that a post-secondary degree raised participation in civic activities more in non-traditional students than in traditional students and emphasized that, for non-traditional students in particular, participation meant involvement through volunteering for community organizations and charities.
- Goldin and Katz (1999) research found that students who benefitted the most from post-secondary education are not the most talented or the least talented but the broad range in between the two extremes.

These studies will be referenced again when pertinent to the discussion about a particular research finding.

Discussion of Hypotheses and Findings

This research focused on the differences in student social capital and any changes to social capital that may occur through participation in the enriching educational experience during their program of study in an institution of higher education. This study applied statistical techniques to determine the significance of each of the following hypotheses.

Hypothesis 1: Social Capital Growth

The first hypothesis evaluated the impact of the enriching educational experience on overall student social capital.

$H0_1$ At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital between participants and non-participants in an enriching educational experience.

Not all experiences had the same significance on student social capital. However, the main effect of the enriching educational experience was significant concerning the difference in student social capital between participants and non-participants as participants had increased their student social capital.

Participants planned to complete or completed an enriching educational experiences during college and participant or non-participant status was determined by student answers to question 7 of the NSSE (appendix A). If a student responded to

question 7 with a 'Done' or 'Plan to do', then the student is considered a participant. If a student responded 'No' or 'Have not decided', then the student is considered a non-participant. In this manner students self-selected their participation in the enriching educational experience.

Seven of the eight experiences showed a significant difference between the participants' and non-participants' social capital as indicated by the ANOVA:

- The main effect of the practicum, internship, field experience, co-op experience, or clinical assignment was significant ($F(1, 628) = 41.30$, $p < .01$).
- The main effect of the community service or volunteer work was significant ($F(1, 622) = 59.79$, $p < .01$).
- The main effect of participating in a learning environment or some other formal program where groups of students take two or more classes together was significant ($F(1, 625) = 63.86$, $p < .01$).
- The main effect of the work on a research project with a faculty member outside of course or program requirements was significant ($F(1, 629) = 25.12$, $p < .01$).
- The main effect of the foreign language coursework was significant ($F(1, 629) = 13.01$, $p < .01$).
- The main effect of the study abroad was significant ($F(1, 625) = 22.25$, $p < .01$).
- The main effect of the culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.) was significant ($F(1, 629) = 13.59$, $p < .01$).
- The main effect of the independent study was not significant at ($p < .01$), but was significance at ($p < .05$).

The results of the eight ANOVA tests demonstrated that the differences in social capital were significant between participants and non-participants in enriching educational experience. The following multiple regression equation utilized student social capital as the dependant variable (criterion) and the eight enriching educational experiences as predictors to determine if the student social capital could be predicted as a function of the enriching educational experience (1).

$$ESSC = \alpha + EEE_8^1 + \varepsilon \quad (1)$$

The results of the regression indicated that the eight predictors explained 21.1% of the variance and these results were found to be statistically significant (Adj R^2 = .21, $F(8, 602) = 21.38$, $p < .01$) indicating that the enriching educational experiences were good predictors of student social capital. The following regression equation predicted social capital from the enriching educational experience (4).

$$\begin{aligned} ESSC = {} & 3.996 + .127\,EEE_1 + .170EEE_2 + .251EEE_3 + .068EEE_4 \\ & + .078EEE_5 + .088EEE_6 + .019EEE_7 + .069EEE_8 \end{aligned} \quad (4)$$

The intercept is 3.996 ($t = 35.06$, $p < .01$) meaning that the non-participant student social capital was 3.996 and the following variables of the enriching educational experience, as indexed by their coefficients, were shown to have the strongest relationship to increasing student social capital.

Three significant EEE variables ($p < .01$) were:

- practicum or internship, EEE_1, increased social capital by .127 (β = .13 ($t = 3.314$, $p < .01$))
- volunteering or community service, EEE_2, increased social capital by .170 (β = .170 ($t = 4.411$, $p < .01$))

- learning community, EEE_3, increased social capital by .251 (β = .251 (t = 6.622, p < .01))

Two significant EEE variables (p < .05) were:

- foreign language, EEE_5, increased social capital by .075 (β = .075 (t = 1.985, p < .05))
- study abroad, EEE_6, increased social capital by .086 (β = .088 (t = 2.247, p < .05))

Overall, the social capital growth hypothesis of a no significant difference in student social capital due to a student participating in one of the eight enriching educational experiences was rejected.

Hypothesis 2: Social Capital by Category

The second hypothesis narrowed the impact of the enriching educational experience by individually applying each of the six categories of student social capital as the dependent variable of the multiple regressions. These categories were more precise due to the selection of specific fields from the twenty-nine questions (NSSE) that had created the overall social capital index.

$H0_2$ At the end of the undergraduate program of study, there is no significant difference in accumulation by category of social capital (civic, trust, volunteering, giving, participation, meeting obligations) between participants and non-participants in an enriching educational experience. The following equation states the theoretical model (2).

$$ESSC_X = \alpha + EEE_8^1 + \varepsilon \qquad (2)$$

Analysis of the second hypothesis found a significant impact of the enriching educational experience variables for each sub-group of social capital. Each of the six sub-group

indices, e.g. civic, trust, volunteering, giving, participation, meeting obligations, and the eight types of enriching educational experiences: (a) practicum, internship, field experience, co-op experience, or clinical assignment; (b) community service or volunteer work; (c) participate in a learning community or some other formal program where groups of students take two or more classes together; (d) work on a research project with a faculty member outside of course or program requirements; (e) foreign language coursework; (f) study abroad; (g) independent study or self-designed major; and (h) culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc. were analyzed using the ordinary least squares regression.

The hypothesis of a no significant difference in student social capital by category due to a student participating in one of the eight enriching educational experiences was rejected. Discussion follows for each of the social capital sub-groups.

Civic Social Capital. The multiple regression utilized student civic social capital as the dependent variable (criterion) and the eight enriching educational experiences coded as individual dummy variables were the predictors. The results of the regression indicated the eight predictors explained 17.9% of the variance and these results were found statistically significant (Adj $R^2 = .18$, $F(8, 660) = 19.23$, $p < .01$) indicating that the enriching educational experiences were good predictors of student social capital. The regression equation predicted increased civic social capital from participating in the enriching educational experience (5).

$$\begin{aligned} ESSC_1 &= 4.077 + .120\,EEE_1 + .149EEE_2 + .172EEE_3 + .086EEE_4 \\ &+ .103EEE_5 + .114EEE_6 + .022EEE_7 + .085EEE_8 \end{aligned} \tag{5}$$

The intercept is 4.077 ($t = 21.43$, $p < .01$) meaning the non-participant student civic social capital was 4.077 and the following variables of the enriching educational experience, as

indexed by its coefficients, was shown to have the strongest relationship to student civic social capital.

Three significant EEE variables ($p < .01$) were:

- practicum or internship, EEE_1, increased civic social capital by .120 ($\beta = .12$ ($t = 3.22$, $p < .01$))
- volunteering or community service, EEE_2, increased civic social capital by .149 ($\beta = .15$ ($t = 3.97$, $p < .01$))
- learning community, EEE_3, increased civic social capital by .172 ($\beta = .17$ ($t = 4.67$, $p < .01$))

Four significant EEE variables ($p < .05$) were:

- worked on a research project with a faculty member outside of course or program requirements, EEE_4, increased civic social capital by .086 ($\beta = .09$ ($t = 2.32$, $p < .05$))
- foreign language coursework, EEE_5, increased civic social capital by .103 ($\beta = .10$ ($t = 2.70$, $p < .05$))
- study abroad experience, EEE_6, increased civic social capital by .114 ($\beta = .11$ ($t = 2.99$, $p < .05$))
- culminating senior experience (capstone, course, senior project, or thesis, comprehensive exam, etc.) , EEE_8, increased civic social capital by .085 ($\beta = .09$ ($t = 2.32$, $p < .05$))

The hypothesis of a no significant difference in student civic social capital sub-group due to a student participating in one of the eight enriching educational experiences was rejected.

Trust Social Capital. The multiple regression utilized student trust social capital as the dependent variable (criterion) and the enriching educational experience as predictors analyzing if the student trust social capital could be predicted as a function of the enriching educational experience. The results of the regression indicated the eight predictors explained 11.5% of the variance and these results were found to be statistically significant (Adj R^2 = .12, $F(8, 663) = 11.93$, $p < .01$) indicating that the enriching educational experiences were good predictors of student trust social capital. The regression equation predicts trust social capital from the enriching educational experience (6).

$$ESSC_2 = 5.501 + .148\,EEE_1 + .036EEE_2 + .226EEE_3 + .015EEE_4 + .007EEE_5 + .081EEE_6 + .002EEE_7 + .084EEE_8 \quad (6)$$

The intercept is 5.501 ($t = 29.49$, $p < .01$) meaning the non-participant student trust social capital was 5.501 and the following enriching educational experience variables, as indexed by their coefficients, were shown to have the strongest relationship to student trust social capital.

Two significant EEE variables ($p < .01$) were:

- practicum or internship, EEE_1, increased trust social capital by .148 ($\beta = .15$ ($t = 3.825$, $p < .01$))
- learning community, EEE_3, increased trust social capital by .226, ($\beta = .23$ ($t = 5.913$, $p < .01$))

Two significant EEE variables ($p < .05$) were:

- study abroad, EEE_6, increased trust social capital by .081 ($\beta = .08$ ($t = 2.06$, $p < .05$))

- culminating senior experience (capstone, course, senior project, or thesis, comprehensive exam, etc.), EEE_8, increased trust social capital by. 084 ($\beta = .084$ ($t = 2.22$, $p < .05$))

The hypothesis of a no significant difference in student trust social capital sub-group due to a student participating in one of the eight enriching educational experiences was rejected.

Volunteering Civic Social Capital. The multiple regression utilized student volunteering social capital as the dependent variable (criterion) and the enriching educational experience as predictors analyzing if the student volunteering social capital could be predicted as a function of the enriching educational experience. The results of the regression indicated the eight predictors explained 18.6% of the variance and were found to be statistically significant (Adj $R^2 = .19$, $F(8, 652) = 19.89$, $p < .01$) indicating that the enriching educational experiences were good predictors of student social capital. The regression equation predicts student volunteering social capital from the enriching educational experience (7).

$$ESSC_3 = 3.041 + .155\,EEE_1 + .132EEE_2 + .204EEE_3 + .133EEE_4 - .049EEE_5 + .079EEE_6 + .049EEE_7 + .071EEE_8 \quad (7)$$

The intercept is 3.041 ($t = 22.28$, $p < .01$) meaning the non-participant student volunteering social capital was 3.041 and the following variables of the enriching educational experience, as indexed by its coefficients, was shown to have the strongest relationship to student social capital.

Four significant EEE variables ($p < .01$) were:

- practicum or internship, EEE_1, increased volunteering social capital by .155, (β = .16 ($t = 4.17$, $p < .01$))
- volunteering or community service, EEE_2, increased volunteering social capital by .132 (β = .13 ($t = 3.52$, $p < .01$))
- learning community, EEE_3, increased volunteering social capital by .204 (β = .20 ($t = 5.52$, $p < .01$))
- worked on a research project with a faculty member outside of course or program requirements, EEE_4, increased volunteering social capital by .133 (β = .123 ($t = 3.57$, $p < .01$))

One significant EEE variable ($p < .05$) was:

- study abroad experience, EEE_6, increased volunteering social capital by .079 (β = .08 ($t = 2.07$, $p < .05$))

The hypothesis of a no significant difference in student volunteering social capital sub-group due to a student participating in one of the eight enriching educational experiences was rejected.

Giving Social Capital. The multiple regression utilizing student giving social capital as the dependent variable (criterion) and the enriching educational experience as predictors analyzed if the student giving social capital could be predicted as a function of the enriching educational experience. The results of the regression indicated the eight predictors explained 15.4% of the variance and these results were found to be statistically significant (Adj $R^2 = .15$, $F(8, 665) = 16.28$, $p < .01$) indicating that the enriching educational experiences were good predictors of student giving social capital. The regression equation predicted increased giving social capital from the enriching

educational experience (8).

$$ESSC_4 = 5.347 + .031EEE_1 + .170EEE_2 + .104EEE_3 + .093EEE_4 + .201EEE_5 + .100EEE_6 + .028EEE_7 + .016EEE_8 \quad (8)$$

The intercept is 5.347 ($t = 26.05$, $p < .01$) meaning the non-participant student giving social capital was 5.347 and the following variables of the enriching educational experience, as indexed by its coefficients, were shown to have the strongest relationship to student giving social capital.

Two significant EEE variables ($p < .01$) were:

- volunteering or community service, EEE_2, giving social capital increased by .170 ($\beta = .170$ ($t = 4.50$, $p < .01$))
- foreign language coursework, EEE_5, giving social capital increased by .201 ($\beta = .20$ ($t = 5.22$, $p < .01$))

Three significant EEE variables ($p < .05$) were:

- learning community, EEE_3, giving social capital increased by .104 ($\beta = .10$ ($t = 2.80$, $p < .05$))
- worked on a research project with a faculty member outside of course or program requirements, EEE_4, giving social capital increased by .093 ($\beta = .09$ ($t = 2.48$, $p < .01$))
- study abroad experience, EEE_6, giving social capital increased by .100 ($\beta = .10$ ($t = 2.60$, $p < .01$))

The hypothesis of no significant difference in the student giving social capital sub-group due to a student participating in one of the eight enriching educational experiences was rejected.

Participation Social Capital. The multiple regression utilized student participation social capital as the dependent variable (criterion) and the enriching educational experience as predictors analyzing if the student participation social capital could be predicted as a function of the enriching educational experience. The results of the regression indicated the eight predictors explained 13.7% of the variance. These results were found to be statistically significant (Adj $R^2 = .14$, $F(8, 660) = 14.25$, $p < .01$) indicating that the enriching educational experiences were good predictors of student social capital. The regression equation predicted participation social capital from the enriching educational experience (9).

$$ESSC_5 = 2.524 + .042\,EEE_1 + .213EEE_2 + .189EEE_3 + .074EEE_4 + .027EEE_5 + .064EEE_6 + .008EEE_7 + .038EEE_8 \quad (9)$$

The intercept is 2.524 ($t = 20.001$, $p < .01$) meaning the non-participant student participation social capital was 2.52 and the following variables of the enriching educational experience, as indexed by its coefficients, was shown to have the strongest relationship to student participation social capital.

Two significant EEE variables ($p < .01$) were:

- volunteering or community service, EEE_2, increased participation social capital by .213 ($\beta = .21$ ($t = 5.55$, $p < .01$))
- learning community, EEE_3, increased participation social capital by .189 ($\beta = .19$ ($t = 4.98$, $p < .01$))

The hypothesis of a no significant difference in the student participation social capital sub-group due to a student participating in one of the eight enriching educational experiences was rejected.

Meeting Obligations, Friends and Family Social Capital. The multiple

regression utilized student meeting obligations social capital as the dependent variable (criterion) and the enriching educational experience as predictors analyzing if the student meeting obligations social capital could be predicted as a function of the enriching educational experience. The results of the regression indicated the eight predictors explained 4.6% of the variance and were found to be statistically significant (Adj R^2 = .05, $F(8, 651) = 4.99$, $p < .01$) indicating that the enriching educational experience was good predictor of student meeting obligations social capital. The regression equation predicted meeting obligations social capital from the enriching educational experience (10).

$$ESSC_6 = 3.687 + .068\,EEE_1 + .071EEE_2 + .181EEE_3 - .032EEE_4 - .020EEE_5 - .023EEE_6 + .064EEE_7 - .004EEE_8 \quad (10)$$

The intercept is 3.687 ($t = 29.18$, $p < .01$) meaning the non-participant student meeting obligations social capital was 3.687 and the following variables of the enriching educational experience, as indexed by its coefficients, was shown to have the strongest relationship to student meeting obligations social capital.

One significant EEE variables ($p < .01$) was:

- learning community, EEE_3, increased meeting obligations social capital by .181 ($\beta = .18$ ($t = 4.486$, $p < .01$))

Only one EEE variable increased student meeting obligations social capital. However, that one variable supports the consistent trend observed between all three hypotheses. The hypothesis of a no significant difference in student meeting obligations of friends and family social capital sub-group due to a student participating in one of the eight enriching educational experiences was rejected.

Overall, the social capital growth hypothesis of no significant difference in student social capital by category of social capital (civic, trust, volunteering, giving, participation, meeting obligations) between participants and non-participants in an enriching educational experience due to a student participating in one of the eight enriching educational experiences was rejected.

Hypothesis 3: Social Capital Controlling Variables

The third hypothesis added additional independent variables. These variables controlled for student attributes. Total student social capital was the dependent variable and the eight enriching educational experience dummy variables were the predictors.

$H0_3$ At the end of the undergraduate program of study, there is no significant difference in accumulation of social capital by demographics (Greek membership, parental educational background, race, ethnicity, gender, student-athlete status, program of study, grade point average) between participants and non-participants in an enriching educational experience.

Analysis of the results for hypothesis three supported the significance of the enriching educational experience variables found in the first two hypotheses. The following equation shows the modifications from the previous two hypotheses (3).

$$ESSC = \alpha + \beta EEE_8^1 + \beta SA_x + \varepsilon \quad (3)$$

The study found significant differences in student social capital due to participation in one of the eight types of enriching educational experiences (internship, volunteering, learning community, outside research project, foreign language, study abroad, independent study, and culminating senior experience) even when there were controls for selected student attributes (fraternity or sorority membership, student athlete status,

parental educational background, race and ethnicity, gender, program of study, and self-reported grade point average).

Not all experiences had the same significant impacts on student social capital. Each of the seven student attributes and the eight types of experiences had significant interactions ($p < .01$). The hypothesis of a no significant change in student social capital due to a student participating in one of the eight enriching educational experiences even when there were controls for selected student attributes was rejected. Discussion follows for each of the student attributes and their impact on enriching educational experiences and associated changes in exiting student social capital.

Fraternity or Sorority Membership. The following variable was added to the multiple regressions. Fraternity or sorority membership is a dummy variable that was coded as a '1' to hold constant fraternity or sorority membership status equal to yes. The multiple regression utilized student social capital as the dependent variable (criterion) and the enriching educational experience analyzing if the student social capital could be predicted as a function of the enriching educational experience. The results of the regression indicated the eight predictors explained 21.9% of the variance and were found to be statistically significant (Adj $R^2 = .22$, $F(9, 601) = 20.04$, $p < .01$) indicating that the enriching educational experiences and the fraternity or sorority variable were good predictors of student social capital. The regression equation predicts social capital from the enriching educational experience (11).

$$\begin{aligned} ESSC = {} & 3.997 + .131EEE_1 + .152EEE_2 + .242EEE_3 + .061EEE_4 \\ & + .081EEE_5 + .086EEE_6 + .013EEE_7 + .067EEE_8 + .101SA_1 \end{aligned} \tag{11}$$

The intercept is 3.997 ($t = 35.26$, $p < .01$) meaning the non-participant student social capital was 3.997 and the following variables of the enriching educational experience, as

indexed by its coefficients, were shown to have the strongest relationship to student social capital.

Four significant EEE variables ($p < .01$) were:

practicum or internship, EEE_1, increased social capital by .113 ($\beta = .113$ ($t = 3.44$, $p < .01$))

- volunteering or community service, EEE_2, increased social capital by .15 ($\beta = .15$ ($t = 3.92$, $p < .01$))
- learning community, EEE_3, increased social capital by .230 ($\beta = .242$ ($t = 6.40$, $p < .01$))
- Fraternity or sorority membership, SA_1, increased social capital by .101 ($\beta = .10$ ($t = 2.74$, $p < .01$))

Two significant EEE variables ($p < .05$) were:

- foreign language coursework, EEE_5, increased social capital by .081 ($\beta = .09$ ($t = 2.7$, $p < .05$))
- study abroad experience, EEE_6, increased social capital by .086 ($\beta = .09$ ($t = 2.6$, $p < .05$))

The hypothesis of a no significant difference in student social capital due to a student participating in one of the eight enriching educational experiences with the additive variable of fraternity or sorority membership controlling for a student attribute was rejected.

Student Athlete Status. The following variable was added to the multiple regressions. Athlete is a dummy variable that was coded as a '1' to hold constant student

athlete status equals yes. The results of the regression indicated the eight predictors explained 21.0% of the variance utilized and were found to be statistically significant (Adj R^2 = .21, $F(9, 600) = 19.02$, $p < .01$) indicating that the enriching educational experiences were good predictors of student social capital. The regression equation predicts social capital from the enriching educational experience follows (12).

$$ESSC = 3.998 + .126\,EEE_1 + .168EEE_2 + .251EEE_3 + .067EEE_4 + .077EEE_5 + .087EEE_6 + .019EEE_7 + .068EEE_8 + .027SA_2 + \varepsilon \quad (12)$$

The intercept is 3.998 ($t = 35.02$, $p < .01$) meaning the non-participant student social capital was 3.998 and the following variables of the enriching educational experience, as indexed by its coefficients, were shown to have the strongest relationship to student social capital.

Three significant EEE variables ($p < .01$) were:

- practicum or internship, EEE_1, increased social capital by .126 (β = .13 ($t = 3.28$, $p < .01$))
- volunteering or community service, EEE_2, increased social capital by .168 (β = .19 ($t = 4.35$, $p < .01$))
- learning community, EEE_3, increased social capital by .251, β = .25 ($t = 6.61$, $p < .01$))

One significant EEE variables ($p < .05$) was:

- study abroad experience, EEE_6, increased social capital by .251, β = .087 ($t = 2.23$, $p < .05$))

As the three enriching educational experiences established in hypothesis one and two, practicum and internship, volunteering, and learning community, were again the most significant contributors in this equation. The significance of the student athlete

variable did not change the overall hypothesized model. This may be due to the small number of student athlete records, which were less than ten percent of the total.

The hypothesis of a no significant difference in student social capital due to a student participating in one of the eight enriching educational experiences with the additive variable student athlete status controlling for a student attribute was rejected.

Parental Education (Father). The following variable was added to the multiple regressions. Parental education is a variable containing different codes for levels of education and was used to hold constant parental education. The results of the regression indicated the eight predictors explained 24.1% of the variance and were found to be statistically significant (Adj $R^2 = .24$, $F(9, 593) = 22.12$, $p < .01$) indicating that the enriching educational experiences were good predictors of student social capital. The regression equation predicting social capital from the enriching educational experience follows (13).

$$\begin{aligned} ESSC = {} & 4.376 + .127\,EEE_1 + .159EEE_2 + .242EEE_3 + .073EEE_4 \\ & + .069EEE_5 + .107EEE_6 - .001EEE_7 + .071EEE_8 - .177SA_3 \end{aligned} \tag{13}$$

The intercept is 4.376 ($t = 32.26$, $p < .01$) meaning the non-participant student social capital was 4.38 and the following variables of the enriching educational experience, as indexed by its coefficients, were shown to have the strongest relationship to student social capital.

Four significant EEE variables ($p < .01$) were:

- practicum or internship, EEE_1, increased social capital by .127 ($\beta = .13$ ($t = 3.36$, $p < .01$))
- volunteering or community service, EEE_2, increased social capital by .159 ($\beta = .16$ ($t = 4.18$, $p < .01$))

- learning community, EEE_3, increased social capital by .242, β = .24 (t = 6.457, p < .01))
- study abroad experience, EEE_6, increased social capital by .107, β = .11 (t = 2.76, p < .01))

The hypothesis of a no significant difference in student social capital due to a student participating in one of the eight enriching educational experiences with the additive variable controlling for a student attribute of parental educational background (father) was rejected.

Gender. The following variable was added to the multiple regressions. The variable gender (male) was used to hold gender constant in the regression. The results of the regression indicated the eight predictors explained 21.0% of the variance and were found to be statistically significant (Adj R^2 = .21, $F(9, 601) = 18.98$, $p < .01$) indicating that the enriching educational experiences were good predictors of student social capital. The regression equation predicted social capital from the enriching educational experience (14).

$$ESSC = 3.986 + .127\,EEE_1 + .172EEE_2 + .251EEE_3 + .068EEE_4 + .079EEE_5 + .088EEE_6 + .020EEE_7 + .068EEE_8 + .010SA_4 \quad (14)$$

The intercept is 3.986 (t = 33.36, p < .01) meaning the non-participant student social capital was 3.996 and the following variables of the enriching educational experience, as indexed by its coefficients, were shown to have the strongest relationship to student social capital.

Three significant EEE variables (p < .01) were:

- practicum or internship, EEE_1, increased social capital by .127 (β = .13 (t = 3.30, p < .01))

- volunteering or community service, EEE_2, increased social capital by .172 (β = .17 ($t = 4.37$, $p < .01$))
- learning community, EEE_3, by .251 (β = .25 ($t = 6.62$, $p < .01$)

Two significant EEE variables ($p < .05$) were:

- foreign language coursework, EEE_5, increased social capital by .079 (β = .08 ($t = 2.0$, $p < .05$))
- study abroad experience, EEE_6, increased social capital by .088 (β = .08 ($t = 2.25$, $p < .05$))

As the three enriching educational experiences established in hypothesis one and two, practicum and internship, volunteering, and learning community, were again the most significant impacts in this equation, then the significance of the gender variable did not change the overall hypothesized model.

The hypothesis of a no significant difference in student social capital due to a student participating in one of the eight enriching educational experiences with the additive variable controlling for a student attribute of gender equals male was rejected.

Race and Ethnicity. The following variable was added to the multiple regressions. The variable race and ethnicity was used to hold these values constant in the regression. The results of the regression indicated the eight predictors explained 21.0% of the variance and were found to be statistically significant (Adj $R^2 = .21$, $F(9, 601) = 18.98$, $p < .01$) indicating that the enriching educational experiences were good predictors of student social capital. The regression equation predicts social capital from the enriching educational experience (18).

$$\begin{aligned} ESSC = {} & 4.007 + .127\,EEE_1 + .169EEE_2 + .251EEE_3 + .068EEE_4 \\ & + .078EEE_5 + .088EEE_6 + .019EEE_7 + .069EEE_8 - .004SA_5 \end{aligned} \tag{15}$$

The intercept is 4.007 ($t = 26.94$ $p < .01$) meaning the non-participant student social capital was 4.007 and the following variables of the enriching educational experience, as indexed by its coefficients, were shown to have the strongest relationship to student social capital.

Three significant EEE variables ($p < .01$) were:

- practicum or internship, EEE_1, increased social capital by .127 (β = .13 ($t = 3.30$, $p < .01$))
- volunteering or community service, EEE_2, increased social capital by .169 (β = .17 ($t = 4.39$, $p < .01$))
- learning community, EEE_3, increased social capital by .251 (β = .25 ($t = 6.61$, $p < .01$))

Two significant EEE variables ($p < .05$) were:

- foreign language coursework, EEE_5, increased social capital by .078 (β = .08 ($t = 1.98$, $p < .05$))
- study abroad experience, EEE_6, increased social capital by .088 (β = .09 ($t = 2.25$, $p < .05$))

As the three enriching educational experiences established in hypothesis one and two, practicum and internship, volunteering, and learning community, were again the most significant impacts in this equation, then the significance of the race and ethnicity variable did not change the overall hypothesized model.

The hypothesis of a no significant difference in student social capital due to a student participating in one of the eight enriching educational experiences with the additive variable controlling for a student attribute of race and ethnicity was rejected.

Self-Reported Grades. The following variable was added to the multiple regressions. The variable self-reported grades was used to hold these values constant in the regression. The results of the regression indicated the eight predictors explained 23.0% of the variance and were found to be statistically significant (Adj R^2 = .23, $F(9, 601) = 21.22$, $p < .01$) indicating that the enriching educational experiences were good predictors of student social capital. The regression equation predicts social capital from the enriching educational experience (16).

$$ESSC = 3.510 + .119\,EEE_1 + .165EEE_2 + .259EEE_3 + .059EEE_4 + .081EEE_5 + .076EEE_6 + .025EEE_7 + .061EEE_8 + .143SA_6 \quad (16)$$

The intercept is 3.510 ($t = 21.09$, $p < .01$) meaning the non-participant student social capital was 3.510 and the following variables of the enriching educational experience, as indexed by its coefficients, were shown to have the strongest relationship to student social capital.

Four significant EEE variables ($p < .01$) were:

- practicum or internship, EEE_1, increased social capital by .119 (β = .12 ($t = 3.31$, $p < .01$))
- volunteering or community service, EEE_2, increased social capital by .165 (β = .17 ($t = 4.35$, $p < .01$))
- learning community, EEE_3, increased social capital by .259, β = .26 ($t = 6.90$, $p < .01$))
- self-reported grades, SA_6, increased social capital by .143, β = .14 ($t = 3.97$, $p < .01$))

One significant variable ($p < .05$) was:

- foreign language coursework, EEE_5, increased social capital by .081 ($\beta = .08$ ($t = 2.086$, $p < .05$))

As the two of the three enriching educational experiences established in hypothesis one and two, volunteering, and learning community, were again the most significant impacts in this equation, then the significance of the self-reported grades variable did not change the overall hypothesized model. However, self-reported grades increased social capital more than the practicum and internship variable. The significance of this variable could be further explored by creating dummy variables of all of the types of self-reported grades estimating which grades contributed more to student social capital.

The hypothesis of a no significant difference in student social capital due to a student participating in one of the eight enriching educational experiences with the additive variable controlling for a student attribute of self-reported grades was rejected.

Program of Study. The following variable was added to the multiple regressions. The variable, program of study, was used to hold these categories constant in the regression. The results of the regression indicated the eight predictors explained 21.2% of the variance and were found to be statistically significant (Adj $R^2 = .21$, $F(8, 592) = 18.97$, $p < .01$) indicating that the enriching educational experiences were good predictors of student social capital. The regression equation (17) predicts social capital from the enriching educational experience.

$$ESSC = 4.032 + .131EEE_1 + .169EEE_2 + .247EEE_3 + .068EEE_4 + .080EEE_5 + .088EEE_6 + .017EEE_7 + .075EEE_8 - .030SA_6 \quad (17)$$

The intercept is 4.032 ($t = 30.06$, $p < .01$) meaning the non-participant student social capital was 4.03 and the following variables of the enriching educational experience, as

indexed by its coefficients, were shown to have the strongest relationship to student social capital.

Three significant EEE variables ($p < .01$) were:

- practicum or internship, EEE_1, increased social capital by .131 ($\beta = .13$ ($t = 3.73$, $p < .01$))
- volunteering or community service, EEE_2, increased social capital by .170 ($\beta = .17$ ($t = 4.357$, $p < .01$))
- learning community, EEE_3, increased social capital by .247, $\beta = .25$ ($t = 6.46$, $p < .01$))

Three significant EEE variables ($p < .05$) were:

- foreign language coursework, EEE_5, increased social capital by .080 ($\beta = .08$ ($t = 2.03$, $p < .05$))
- study abroad experience, EEE_6, increased social capital by .088 ($\beta = .09$ ($t = 2.22$, $p < .05$))
- culminating senior experience (capstone, course, senior project, or thesis, comprehensive exam, etc.) , EEE_8, increased social capital by .075 ($\beta = .08$ ($t = 1.98$, $p < .05$))

As the three enriching educational experiences established in hypothesis one and two, practicum and internship, volunteering, and learning community, were again the most significant impacts in this equation, then the significance of the program of study variable did not change the overall hypothesized model. The individual programs of study were summarized by NSSE into ten major groupings similar by subject (Chapter 1, definitions). The hypothesis of a no significant difference in student social capital due to

a student participating in one of the eight enriching educational experiences with the additive variable controlling for a student attribute of program of study was rejected.

Overall, the social capital growth hypothesis of a no significant difference in student social capital by student attribute (Greek membership, parental educational background, race, ethnicity, gender, student-athlete status, program of study, grade point average) between participants and non-participants in an enriching educational experience due to a student participating in one of the eight enriching educational experiences was rejected.

Implications for Further Research

The findings of this study are important because they identify the effect of student participation in the enriching educational experience on student social capital in institutions of higher education. Student social capital in higher education is important because education can help students embed within themselves the tools defined as part of social capital, such as the ability to network, understand diversity, volunteer, meet obligations, and become a member in formal organizations. These abilities are needed for ongoing interactions in the world after completing the program of undergraduate studies (Schoo, et al. 2005 Appendix B).

Variables for further research, individually or combined using dummy variables to split all the various categories into separate fields include:

- Parental education: father, mother
- Student age by cohort
- Race and ethnicity
- Program of study

- Place of residence
- Fraternity or sorority membership
- Full-time or part-time status
- Transfer student status or international student status

Combinations of these listed variables with other variables may inform researchers about specific inter-relationships between variables.

Two implications are significant from the research. First is the importance of the learning community in all equations. The NSSE defines the learning community in question 7 as a learning community or some other formal program where groups of students take two or more classes together. In this study, 28.7% of the students participated in the learning community with an average student social capital mean of 5.50 and the non-participants' social capital averaged 4.77, the widest margin of any group analysis. Other combinations of student attributes may bring out different relationships supporting the learning community. One such relationship may exist for the non-traditional students achieving success in their program of study, e.g. older students or students with greater family or working obligations, or students in poverty/low income.

Second, the success of the basic model consistently interpreted a positive difference in student social capital as a result of participating in the enriching educational experience. The results of this analysis supported the conclusion that community service was second only to the learning community, where students take courses together. The significance varies among the other four types of enriching educational experiences with foreign language ranking first, one time. This significance supports further research about enriching educational experience programs contributing to student social capital.

The student attributes of fraternity or sorority membership, parental education (father), and self-reported grades were significance in terms of interpreting more of the variance of student social capital. Other attributes of gender, student-athlete, race-ethnicity and program of study had little effect on student social capital. These attributes may be areas for further exploration between student social capital and the enriching educational experience. There were some variables in the data set that were not analyzed that may be of value for further investigation, e. g., age, place of residence, full-time status, part-time status, mother's educational background, transfer student, and international student.

Overall, further work, to verify and concur with the results of this exploratory study, is needed. From the correlations between student descriptive variables and overall student social capital, there are two variables worthy of future study. The first variable is the parental educational background. The student social capital had significant correlations with different parental educational backgrounds of the father when the education was less than a bachelor's degree. Wells (2008) emphasized the mothers' educational background was most important and, as this variable was not analyzed, it should be included in future research. Through the use of dummy variables for each of the educational background criteria, more information may be forthcoming exploring these students' accumulation of social capital and the effects of the enriching educational experience as a proxy for first generation students.

The second variable is student age. The student age variable supplied by NSSE was the year of birth (continuous) as well as categorical variables with six definitions. Older students may have more social capital and it would be appropriate to control for

this factor by examining the age cohort variables for possible interactions. Using dummy variables for the various the categories of a student descriptive variable could be used for other variables, e. g. parental educational background (mother), the residential data, full-time or part-time status, and other listed variables in the NSSE.

The residential variable and the fraternity or sorority membership data would be a good two by two ANOVA or Chi square model for explaining the impact of the fraternity/sorority on student social capital. The residential data can divide students into groups which live near campus or away from campus. The hours spent working on or off campus were included in the meeting obligations social capital index. Having another variable may help explain variations in the data by reducing the normality violations of questions concerning hours worked. The issue appears to be that many students do not spend many hours away from their academic studies and home obligations. Therefore, additional research into the 'meeting obligations' variable is recommended. After extensive data transformations performed to reduce skewness and kurtosis to achieve heterogeneity of variance, the significant of this variable was reduced. Despite these data modifications and a low outcome, if a student participated in the learning community, their meeting obligations social capital significantly increased. This may reflect students prioritizing their obligations supporting the learning community as a primary vehicle of enriching educational experience over the other choices.

The significance of the learning community experience ripples through the entire study. This significance could reflect prioritizing of the learning community as an effective structure for students with outside obligations which limit opportunities for participating in other enriching educational experiences. Looking at the learning

community experience and controlling for area of residence, full-time or part-time status, and hours spent working may shed light on reasons for its significance on student social capital.

Adding data from other sources may help with interpreting NSSE in other models for future research such as determining student social capital of students of low socio-economic status or success of the EEE in job seeking behaviour. This type of research would require additional information such as Pell grant data. There could be interesting results with using these other data sources as Putnam (2000) used data from three surveys with bivariate correlations to establish statistical significance. Another data source may be to incorporate the data from the National Associations of Colleges and Employers (NACE) survey into the data base. The NACE data perhaps can enhance the significance of the enriching educational experience in terms of successful job placements.

A change over time model could be created to track social capital development. It might be difficult to do a pre-post-test which would require matching freshman students and seniors. As the survey is administered on behalf of member schools by the NSSE organization, the matching of students may beyond administration protocols. The model would involve institutional review board approval, and assuring student anonymity.

An alternative to the pre-post-test methodology would be a group treatment by student attribute. Estimating social capital from freshman data could be summarized by selecting various student attributes as a group and regressed against the student social capital indices. These estimated or predicted social capital freshman students indices would be added to the senior data using the same selected student attributes. After subtracting the estimated freshman social capital indices from the senior social capital

indices, there would be generated and estimation of the change in social capital. These indices would be unique for each group of the selected student attributes. An example would be to select a cohort of freshman students whose parental educational background was less than a bachelor's degree, estimate the freshman incoming social capital, and update the estimate to any senior whose parental background had same attributes. In this way, a change over time could be estimated in a group fashion instead of matching student to student. This new change over time index could be used as the dependent variable in the study's models. The process could work for any student attribute or collection of attributes.

The ranking of the effectiveness of the enriching educational experience should be explored. This study suggested the effectiveness of the learning community as an enriching educational experience. Additionally, the NACE report (2011, 2012) focused on the paid internship and perhaps the programs which have a paid internship also focus on the learning community's more formal structure. This is an area worth additional research.

The significance of the foreign language coursework and studies abroad, while not as strong or consistent as the internship, community service, and learning community, was a presence throughout this research and should have additional analysis. Moreover, students that are low income, first generation attendees and English learners should be further explored as disaggregated groupings when data becomes available.

Discussion

There were several significant findings which supported and added to the selected studies listed earlier in this chapter. This section discusses these studies in context of the

research about students participating in the enriching educational experiences and creating significant differences in participant's student social capital.

These significant findings concerning the learning community and participating in the enriching educational experience, not only supported Putnam's (2000) proposal in which education can help reverse the decline in community social capital; these findings add to Putnam's research. They added to the research by demonstrating the importance of students participating in activities outside of the classroom in different environments which may be found in the community, such as in businesses, non-profit organizations, and governmental agencies. A project could be designed using the Project Pericles format which is an interdisciplinary combination of students involved in a community project, e. g., engineering students, education students, and social work students interviewing residents in a low-income housing project near a school about a proposal for a children's playground. The significance of these activities emphasized the importance of building informal associations among other students in the higher education community as well as the people in the larger outside community.

Enriching educational experiences help bridge education into the structured activities between higher education and the community. These findings enhance D'Agostino's (2010) research which found significant social capital increases, when students undertook service-learning activities out of the classroom into the community. The results of this research showed the significance of increased student social capital from participation in seven of the eight different types of programs contained within the enriching educational experience (EEE). Such experiences are internships, community service, and studies abroad.

The results of this study on student civic social capital supports Brand's (2010) research which projected that a post-secondary degree raised participation in civic activities. This research showed that participation in the enriching educational experience added 18% to the student civic social capital index. Therefore, the student is better prepared to participate in civic activities after completing their undergraduate program of study. Also, Putnam's (2000) research indicated that civic social capital is the mainstay of civic interaction in the community. The 18% increase in student civic social capital found in this study was in the higher education environment; these students will take these experiences with them out into the community and be better prepared.

McMahon (2010) addressed social capital as happiness and emphasized that human capital benefits accrued to college graduates through increased earnings, perceived happiness, economic growth, and social outcomes like democratization, increased political stability, reduced crime rates, and reduced pollution. The results of this study add to that literature because as students increased their civic social capital there would be additional benefits accrued to them in a similar fashioned as described by McMahon and Putnam.

Student trust social capital increased 12% in this study for participants. The high level of the trust index projects that student trust their environment even for non-participants. The results of this study add to the research because the enriching educational experience is a different NSSE benchmark that student-faculty interaction (Kuh 2005). The students who increased their trust social capital through participation reflected the consistent trends supporting the importance of the learning community

program and the internship, practicum, field experience programs shared between all three hypotheses.

Student volunteering social capital from this study adds to the literature. Four of the enriching educational experiences were significant. One of these experiences was when a student does research, outside of their program of study, with a faculty member. Researchers, Astin (1993), Kuh and Hu (2001), and Pascarella and Terenzini (1991), suggested that student contact with faculty outside of the classroom promoted and supported student persistence and completion. This research showed a significant relationship between students volunteering outside of the classroom with faculty doing research which would also support student persistence and completion. The significance of the EEE (learning community, internship, community service, research work) and volunteering social capital results supported Putnam (2000) findings that volunteering is crucial to a community's social capital and Brand's (2010) projections that involvement through volunteering for community organizations and charities raised participation in civic activities.

As students learn to volunteer during higher education, it is predicted by the previously mentioned researchers, that students will take these behaviors with them out into the community. In the analysis of the volunteering social capital model, the work with faculty outside of the program of study was fourth in significance in the analysis. The results of this study add to the research because the enriching educational experience is considered a different NSSE benchmark than student-faculty interaction. The impacts of the enriching educational experience coefficients explain 18% of the variability highlighting the strength of the experience. These results were consistent with the trends

observed with the three main EEE experiences (practicum and internship, volunteering, and the learning community program).

Student giving social capital was built from student answers about diversity. These results may estimate that students were interacting with other students building a diverse network of interrelationships. These interrelationships may be supported by the significance of the foreign language coursework which increased giving social capital and working on a research project with a faculty member outside of coursework or program requirements, which increased giving social capital. These two experiences add to the consistency observed between the main enriching educational experiences. The significance of the study results support Pascarella and Terenzini's (2005) research which found significance in the institutional role that creating opportunities for students to meet students who are different from them in religion, culture, race, ethnicity and social economic status is important to student well-being. Students are giving of their most important commodity, time, during these opportunities.

Student participation social capital was limited in scope to volunteering and the learning community; fewer EEE variables increased student participation social capital. Putnam (2000) viewed participation in formal organizations as a crucial building block of social capital. Variables are limited in the NSSE for this index with the exclusion of the fraternity or sorority variable; a formal organization membership used elsewhere to control a student attribute. In this research the hours spent in co-curricular activities were added to this variable. Even with these restrictions, 14% of the variance in participation social capital came from the EEE experiences. Fields building participation social capital may need to be further evaluated. These results were consistent with the trends observed

with the three main EEE experiences (practicum and internship, volunteering, and the learning community program).

Student meeting obligations social capital was the weakest of the categories. One EEE variable increased student social capital, the learning community. However, as this one variable supported the consistent trend observed between this study findings, its significance, even in the weakest of the models, is important. This social capital sub-group index had the most transformed variables. This could reflect prioritizing of the learning community's more formal structure for students with outside obligations limiting opportunities for participating in the enriching educational experience.

Fraternity or sorority membership contributed 1% additional student social capital. Pascarella and Terenzini (2005) associated postsecondary level social capital with valuable resources accessed through social networks and extracurricular activities, service groups, fraternal groups, intramural teams with career-relevant skills. The additional social capital from the fraternity and sorority variable supports this research while not changing the significance of the difference in social capital from participating in the enriching educational experience. The significance of this variable was in the variable's additional contribution to the model of students participating in the enriching educational experience, as the variable added to the student social capital. Putnam (2000) used the membership in a formal organization as the major component of the his research into participation social capital. These results add to the literature that Putnam's findings may be applied in higher education.

Self-reported grades contributed 2% to student social capital. Brand (2010) projected that a post-secondary degree raised participation in civic activities more in non-

traditional students than in traditional students particularly when non-traditional student participation meant involvement through volunteering for community organizations and charities. Hauser (2000) studied academic abilities and concluded that education's effect on social capital exceeded student verbal and quantitative abilities. In this research, student self-reported grades correlated with overall social capital thus significant differences are not solely the domain of the student with the highest grades which supports Brand's research. In this way, the significance of student participation in the enriching educational experience adds to the research.

This research showed that the effect of increasing student social capital through the enriching educational experience occurs is stronger for students whose parents had less than a bachelor's education relative to other students. Through additional research, more information may be forthcoming exploring these students' accumulation of social capital and the effects of the enriching educational experience as a proxy for first generation students.

Overall, there were several important findings that emerged from this study. The first point is the significance of the learning community increasing student social capital in twelve of the thirteen equations; it was second in the remaining equation. Volunteering and community service, and practicum and internship, were also significant. This finding may explain the importance of student engagement, particularly its importance for institutions who may be applying for the Carnegie Index, however, further research is required. Proving a campus is engaged with the community may increase students' opportunities to interact with the community as well as organizations interacting with the campus. Service learning courses use engagement processes with the

community and these relationships may bring the community more actively into the academic classroom environment. These processes serve as a foundation for better enriching educational experiences. These improved experiences could impact the National Associations of Colleges and Employers (NACE) survey results for students job seeking opportunities or graduate school applications.

The second point is the consistent reduction in the student social capital index for the students not participating in an enriching educational experience, even when the non-participant social capital index is high, such as found in student civic social capital. These students are leaving their programs not as well prepared for social interactions as other the students who were participants (Schoo et al. 2005; Appendix B). Enriching educational experiences from the higher education process may guide students better through the complex interrelations in the community, and the world beyond the ivory tower.

The third point is the presence of the foreign language and study abroad experience as a significant variable. This significance speaks to the extra effort involved for a student to participate and the social capital gained could support the more liberal arts experiences as important to building social capital through the critical thinking process. In short, this research contributes to the literature by providing important results relevant to higher education, the student and the community.

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Appendix A. NSSE Instrument

National Survey of Student Engagement 2010

The College Student Report

1 **In your experience at your institution during the current school year, about how often have you done each of the following? Mark your answers in the boxes. Examples: ☒ or ☒**

	Very often	Often	Some-times	Never
a. Asked questions in class or contributed to class discussions	☐	☐	☐	☐
b. Made a class presentation	☐	☐	☐	☐
c. Prepared two or more drafts of a paper or assignment before turning it in	☐	☐	☐	☐
d. Worked on a paper or project that required integrating ideas or information from various sources	☐	☐	☐	☐
e. Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	☐	☐	☐	☐
f. Come to class without completing readings or assignments	☐	☐	☐	☐
g. Worked with other students on projects **during class**	☐	☐	☐	☐
h. Worked with classmates **outside of class** to prepare class assignments	☐	☐	☐	☐
i. Put together ideas or concepts from different courses when completing assignments or during class discussions	☐	☐	☐	☐
j. Tutored or taught other students (paid or voluntary)	☐	☐	☐	☐
k. Participated in a community-based project (e.g., service learning) as part of a regular course	☐	☐	☐	☐
l. Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment	☐	☐	☐	☐
m. Used e-mail to communicate with an instructor	☐	☐	☐	☐
n. Discussed grades or assignments with an instructor	☐	☐	☐	☐
o. Talked about career plans with a faculty member or advisor	☐	☐	☐	☐
p. Discussed ideas from your readings or classes with faculty members outside of class	☐	☐	☐	☐
q. Received prompt written or oral feedback from faculty on your academic performance	☐	☐	☐	☐
r. Worked harder than you thought you could to meet an instructor's standards or expectations	☐	☐	☐	☐
s. Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	☐	☐	☐	☐
t. Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	☐	☐	☐	☐
u. Had serious conversations with students of a different race or ethnicity than your own	☐	☐	☐	☐
v. Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	☐	☐	☐	☐

2 **During the current school year, how much has your coursework emphasized the following mental activities?**

	Very much	Quite a bit	Some	Very little
a. **Memorizing** facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form	☐	☐	☐	☐
b. **Analyzing** the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components	☐	☐	☐	☐
c. **Synthesizing** and organizing ideas, information, or experiences into new, more complex interpretations and relationships	☐	☐	☐	☐
d. **Making judgments** about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions	☐	☐	☐	☐
e. **Applying** theories or concepts to practical problems or in new situations	☐	☐	☐	☐

3 **During the current *school year*, about how much reading and writing have you done?**

a. Number of assigned textbooks, books, or book-length packs of course readings

☐ None ☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ More than 20

b. Number of books read on your own (not assigned) for personal enjoyment or academic enrichment

☐ None ☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ More than 20

c. Number of written papers or reports of **20 pages or more**

☐ None ☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ More than 20

d. Number of written papers or reports **between 5 and 19 pages**

☐ None ☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ More than 20

e. Number of written papers or reports of **fewer than 5 pages**

☐ None ☐ 1-4 ☐ 5-10 ☐ 11-20 ☐ More than 20

4 **In a *typical week*, how many homework problem sets do you complete?**

	None	1-2	3-4	5-6	More than 6
a. Number of problem sets that take you **more** than an hour to complete	☐	☐	☐	☐	☐
b. Number of problem sets that take you **less** than an hour to complete	☐	☐	☐	☐	☐

5 **Mark the box that best represents the extent to which your examinations during the current school year have challenged you to do your best work.**

Very little ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Very much

6 **During the current school year, about how often have you done each of the following?**

	Very often	Often	Some-times	Never
a. Attended an art exhibit, play, dance, music, theater, or other performance	☐	☐	☐	☐
b. Exercised or participated in physical fitness activities	☐	☐	☐	☐
c. Participated in activities to enhance your spirituality (worship, meditation, prayer, etc.)	☐	☐	☐	☐
d. Examined the strengths and weaknesses of your own views on a topic or issue	☐	☐	☐	☐
e. Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	☐	☐	☐	☐
f. Learned something that changed the way you understand an issue or concept	☐	☐	☐	☐

7 **Which of the following have you done or do you plan to do before you graduate from your institution?**

	Done	Plan to do	Do not plan to do	Have not decided
a. Practicum, internship, field experience, co-op experience, or clinical assignment	☐	☐	☐	☐
b. Community service or volunteer work	☐	☐	☐	☐
c. Participate in a learning community or some other formal program where groups of students take two or more classes together	☐	☐	☐	☐
d. Work on a research project with a faculty member outside of course or program requirements	☐	☐	☐	☐
e. Foreign language coursework	☐	☐	☐	☐
f. Study abroad	☐	☐	☐	☐
g. Independent study or self-designed major	☐	☐	☐	☐
h. Culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)	☐	☐	☐	☐

8 **Mark the box that best represents the quality of your relationships with people at your institution.**

a. Relationships with **other students**

Unfriendly, Unsupportive, Sense of alienation ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Friendly, Supportive, Sense of belonging

b. Relationships with **faculty members**

Unavailable, Unhelpful, Unsympathetic ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Available, Helpful, Sympathetic

c. Relationships with **administrative personnel and offices**

Unhelpful, Inconsiderate, Rigid ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 Helpful, Considerate, Flexible

9 **About how many hours do you spend in a typical 7-day week doing each of the following?**

a. Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

b. Working for pay **on campus**

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

c. Working for pay **off campus**

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

d. Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

e. Relaxing and socializing (watching TV, partying, etc.)

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

f. Providing care for dependents living with you (parents, children, spouse, etc.)

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

g. Commuting to class (driving, walking, etc.)

☐ 0 ☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ 21-25 ☐ 26-30 ☐ More than 30

Hours per week

10 **To what extent does your institution emphasize each of the following?**

	Very much	Quite a bit	Some	Very little
a. Spending significant amounts of time studying and on academic work	☐	☐	☐	☐
b. Providing the support you need to help you succeed academically	☐	☐	☐	☐
c. Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	☐	☐	☐	☐
d. Helping you cope with your non-academic responsibilities (work, family, etc.)	☐	☐	☐	☐
e. Providing the support you need to thrive socially	☐	☐	☐	☐
f. Attending campus events and activities (special speakers, cultural performances, athletic events, etc.)	☐	☐	☐	☐
g. Using computers in academic work	☐	☐	☐	☐

11 **To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?**

	Very much	Quite a bit	Some	Very little
a. Acquiring a broad general education	☐	☐	☐	☐
b. Acquiring job or work-related knowledge and skills	☐	☐	☐	☐
c. Writing clearly and effectively	☐	☐	☐	☐
d. Speaking clearly and effectively	☐	☐	☐	☐
e. Thinking critically and analytically	☐	☐	☐	☐
f. Analyzing quantitative problems	☐	☐	☐	☐
g. Using computing and information technology	☐	☐	☐	☐
h. Working effectively with others	☐	☐	☐	☐
i. Voting in local, state, or national elections	☐	☐	☐	☐
j. Learning effectively on your own	☐	☐	☐	☐
k. Understanding yourself	☐	☐	☐	☐
l. Understanding people of other racial and ethnic backgrounds	☐	☐	☐	☐
m. Solving complex real-world problems	☐	☐	☐	☐
n. Developing a personal code of values and ethics	☐	☐	☐	☐
o. Contributing to the welfare of your community	☐	☐	☐	☐
p. Developing a deepened sense of spirituality	☐	☐	☐	☐

12 **Overall, how would you evaluate the quality of academic advising you have received at your institution?**

☐ Excellent
☐ Good
☐ Fair
☐ Poor

13 **How would you evaluate your entire educational experience at this institution?**

☐ Excellent
☐ Good
☐ Fair
☐ Poor

14 **If you could start over again, would you go to the *same institution* you are now attending?**

☐ Definitely yes
☐ Probably yes
☐ Probably no
☐ Definitely no

15 **Write in your year of birth:** 1 9 ☐ ☐

16 **Your sex:**
☐ Male ☐ Female

17 **Are you an international student or foreign national?**
☐ Yes ☐ No

18 **What is your racial or ethnic identification? (Mark only one.)**
☐ American Indian or other Native American
☐ Asian, Asian American, or Pacific Islander
☐ Black or African American
☐ White (non-Hispanic)
☐ Mexican or Mexican American
☐ Puerto Rican
☐ Other Hispanic or Latino
☐ Multiracial
☐ Other
☐ I prefer not to respond

19 **What is your current classification in college?**
☐ Freshman/first-year ☐ Senior
☐ Sophomore ☐ Unclassified
☐ Junior

20 **Did you begin college at your current institution or elsewhere?**
☐ Started here ☐ Started elsewhere

21 **Since graduating from high school, which of the following types of schools have you attended other than the one you are attending now? (Mark all that apply.)**
☐ Vocational or technical school
☐ Community or junior college
☐ 4-year college other than this one
☐ None
☐ Other

22 **Thinking about this current academic term, how would you characterize your enrollment?**
☐ Full-time ☐ Less than full-time

23 **Are you a member of a social fraternity or sorority?**
☐ Yes ☐ No

24 **Are you a student-athlete on a team sponsored by your institution's athletics department?**
☐ Yes ☐ No (Go to question 25.)

On what team(s) are you an athlete (e.g., football, swimming)? Please answer below:

25 **What have most of your grades been up to now at this institution?**
☐ A ☐ B+ ☐ C+
☐ A- ☐ B ☐ C
☐ B- ☐ C- or lower

26 **Which of the following best describes where you are living now while attending college?**
☐ Dormitory or other campus housing (not fraternity/sorority house)
☐ Residence (house, apartment, etc.) within **walking distance** of the institution
☐ Residence (house, apartment, etc.) within **driving distance** of the institution
☐ Fraternity or sorority house
☐ None of the above

27 **What is the highest level of education that your parent(s) completed? (Mark one box per column.)**

Father	Mother	
☐	☐	Did not finish high school
☐	☐	Graduated from high school
☐	☐	Attended college but did not complete degree
☐	☐	Completed an associate's degree (A.A., A.S., etc.)
☐	☐	Completed a bachelor's degree (B.A., B.S., etc.)
☐	☐	Completed a master's degree (M.A., M.S., etc.)
☐	☐	Completed a doctoral degree (Ph.D., J.D., M.D., etc.)

28 **Please print your major(s) or your expected major(s).**

a. Primary major (Print only one.):

b. If applicable, second major (not minor, concentration, etc.):

THANKS FOR SHARING YOUR RESPONSES!

After completing the survey, please put it in the enclosed postage-paid envelope and deposit it in any U.S. Postal Service mailbox. Questions or comments? Contact the National Survey of Student Engagement, Indiana University, 1900 East Tenth Street, Suite 419, Bloomington IN 47406-7512 or nsse@indiana.edu or www.nsse.iub.edu.

Appendix B. Social Capital Diagrams

Figure B.1 Individual Construct of Social Capital Relationships (Schoo, et al. 2005).

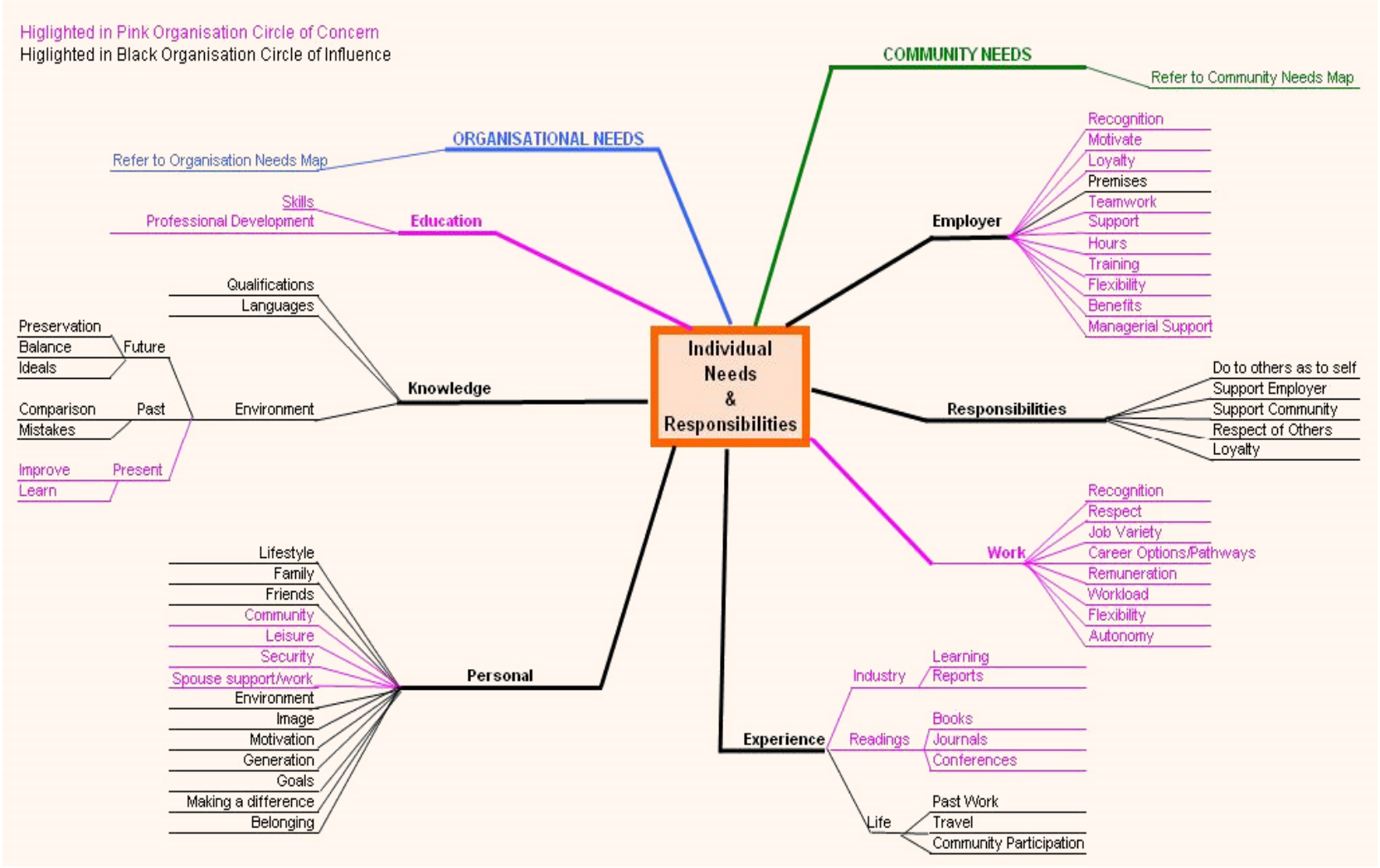


Figure B.2 Organizational Construct of Social Capital Relationships (Schoo, et al. 2005).

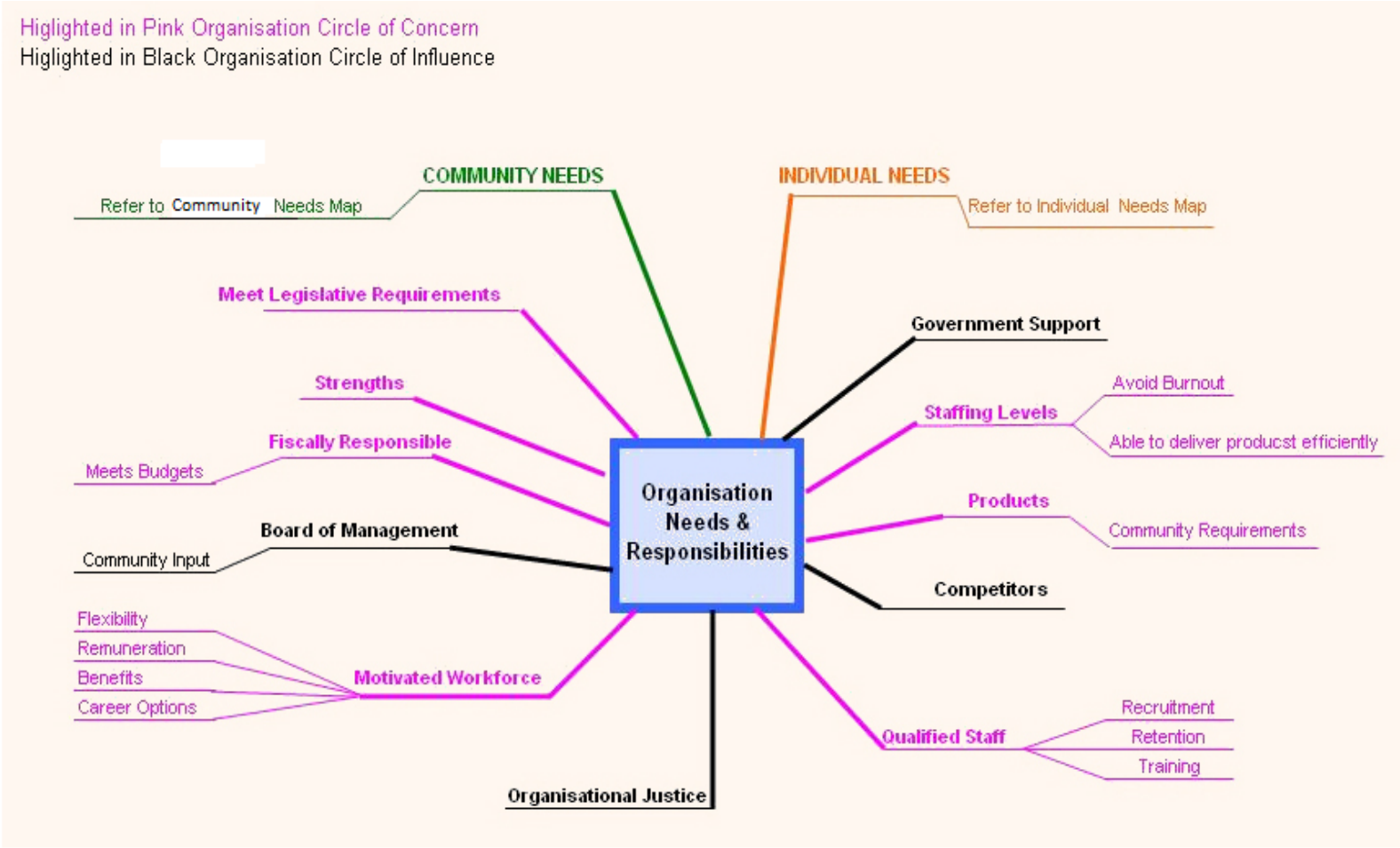
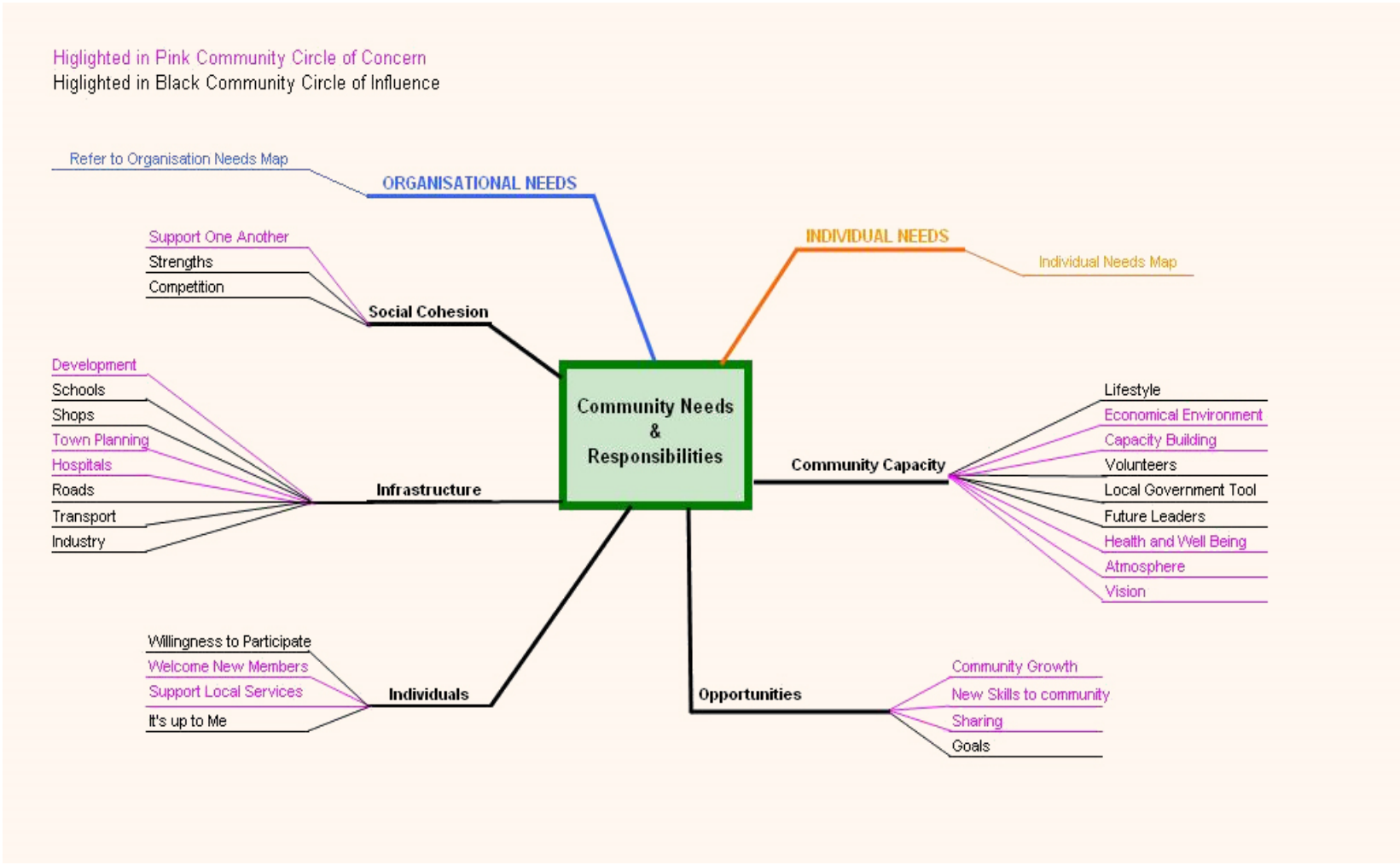
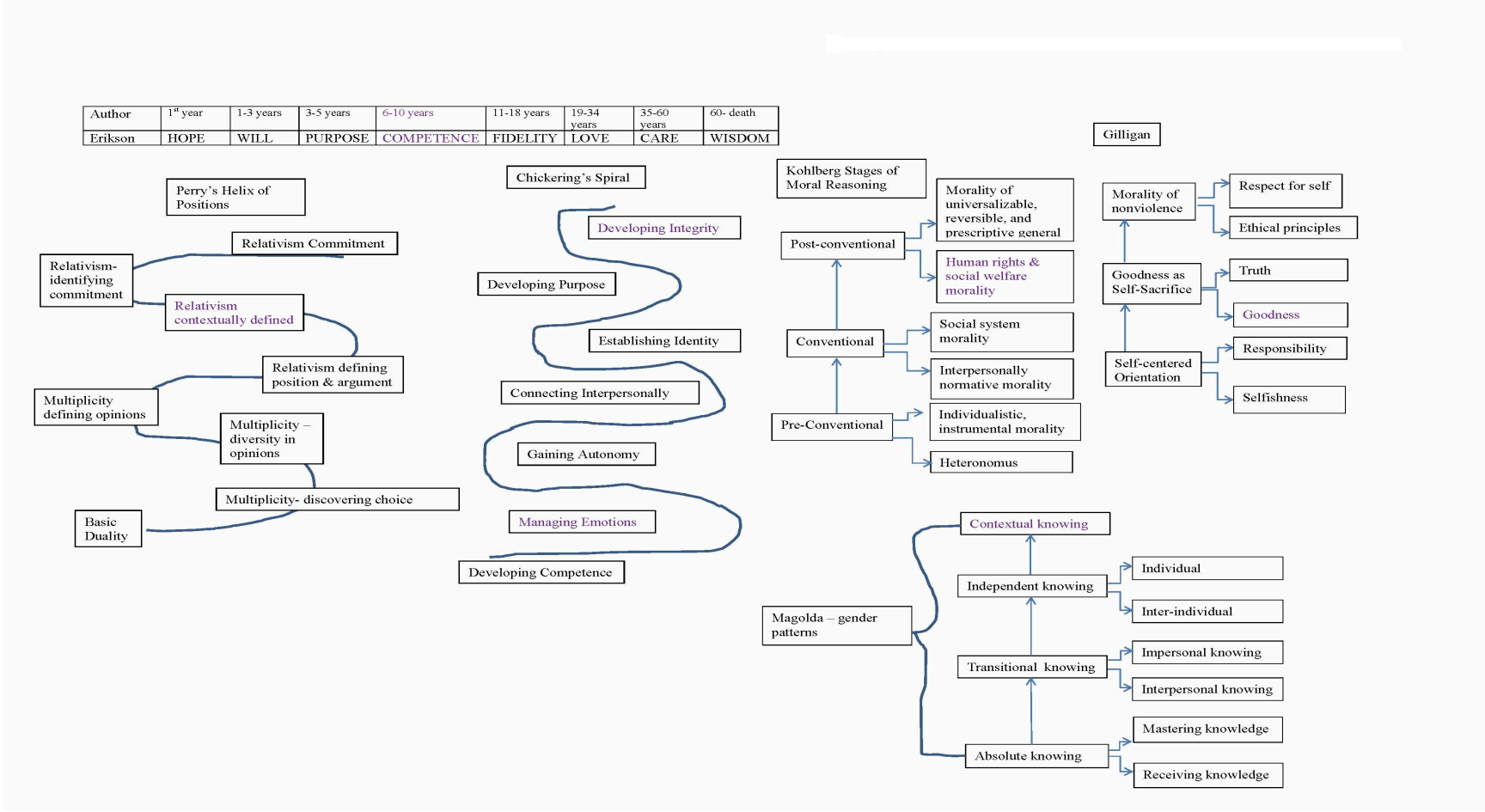


Figure B.3 Community Construct of Social Capital Relationships (Schoo, et al. 2005).



Appendix C. Student Development Theory

Figure C1. Perry, Chickering, Kohlberg, Gilligan, Magolda Theorists



Appendix D. Social Capital Sub-Groups Correlations and Normality Testing

Table D.1

Summary of Intercorrelations, Means, and Standard Deviations for Student Behavior Questions (Q8a, Q8b, Q8c, Q11n, Q10c) on the Trust Social Capital Category

Indicator by Social Capital	Trust	Q8a*	Q8b	Q8c	Q11n	Q10c
Trust	1	.659	.702	.715	.648	.642
Q8a*	.659	1	.410	.342	.278	.271
Q8b	.702	.410	1	.515	.292	.230
Q8c	.715	.342	.515	1	.227	.311
Q11n	.648	.288	.292	.227	1	.298
Q10c	.642	.271	.230	.311	.298	1
Means (SD)	6.6199 (1.53)	7.6579 (2.01)	7.3677 (2.01)	6.1639 (2.42)	6.2840 (2.52)	5.6259 (2.39)
Cronbach's Alpha	.795					
Cronbach's Alpha Based on Standardized Items	.823					

** transformed field due to skewness, kurtosis, and tests for normality

Table D.2

Summary of Intercorrelations, Means, and Standard Deviations for Student Behavior Questions (Q10f, Q6a, Q11i, Q11o) on the Civic Social Capital Category

Indicator by Social Capital	Civic	Q10f	Q6a	Q11i	Q11o
Civic	1	.642	.544	.724	.742
Q10f	.642	1	.227	. 211	.317
Q6a	.544	.227	1	.151	. 152
Q11i	.724	.211	.151	1	.468
Q11o	.742	.317	.152	.468	1
Means for Civic Social Capital	5.7606 (1.62)	6.3506 (2.30)	4.9210 (2.21)	6.0920 (2.71)	5.6789 (2.48)
Cronbach's Alpha	.749				
Cronbach's Alpha Based on Standardized Items	.782				

Table D.3

Summary of Intercorrelations, Means, and Standard Deviations for Student Behavior Questions (Q1j, Q1s, Q1k, Q11m) on the Volunteering Social Capital Category

Indicator by Social Capital	Civic	Q1j	Q1k	Q1s*	Q11m
Volunteering	1	.700	.647	.471	.652
Q1j	.700	1	.248	. 300	.120
Q1k	.647	.248	1	.320	. 147
Q1s*	.471	.300	.320	1	.217
Q11m	.652	.120	.147	.217	1
Means for Volunteering Social Capital	4.0957 (1.15)	4.6611 (2.35)	3.8593 (1.94)	1. 2664 (.32)	6.5962 (2.36)
Cronbach's Alpha	.632				
Cronbach's Alpha Based on Standardized Items	.756				

** transformed field due to skewness, kurtosis, and tests for normality

Table D.4

Summary of Intercorrelations, Means, and Standard Deviations for Student Behavior Questions (Q6b, Q6c, Q9d, Q11h, Q11p) on the Participation Social Capital Category

Indicator by Social Capital	Participation	Q6b*	Q6c	Q9d	Q11h	Q11p*
Participation	1	.359	.742	.767	.554	.352
Q6b*	.359	1	.189	.124	.246	.184
Q6c	.742	.189	1	.367	.127	.096
Q9d	.767	.124	.367	1	.188	.333
Q11h	.554	.246	.127	.188	1	.123
Q11p	.352	.184	.096	.333	.123	1
Means for Participation Social Capital	3.3071 (1.05)	2.6230 (.53)	4.4790 (2.59)	4.1534 (2.50)	2.59 (1.92)	2.6915 (.43)
Cronbach's Alpha	.648					
Cronbach's Alpha Based on Standardized Items	.735					

** transformed field due to skewness, kurtosis, and tests for normality

Table D.5

Summary of Intercorrelations, Means, and Standard Deviations for Student Behavior Questions (Q11l, Q6e, Q1u, Q1v) on the Giving Social Capital Category

Indicator by Social Capital	Giving	Q11l	Q6e	Q1u	Q1v
Giving	1	.629	.660	.825	.803
Q11l	.629	1	.288	.306	.219
Q6e	.660	.288	1	.337	.371
Q1u	.825	.306	.337	1	.740
Q1v	.803	.219	.371	.74	1
Means for Giving Social Capital	6.7221 (1.73)	6.1731 (2.46)	7.0672 (2.14)	6.6881 (2.45)	6.9599 (2.42)
Cronbach's Alpha	.825				
Cronbach's Alpha Based on Standardized Items	.843				

** transformed field due to skewness, kurtosis, and tests for normality

Table D.6

Summary of Intercorrelations, Means, and Standard Deviations for Student Behavior Questions (Q10b, Q10d, Q10e, Q11b, Q9b, Q9c, Q9f) on the Meeting Obligations Social Capital Category

Indicator by Social Capital	Meeting Obligations	Q10b	Q10d	Q10e	Q11b*	Q9b*	Q9c*	Q9f*
Meeting Obligations	1	.359	.742	.767	.554		.352	
Q6b*	.359	1	.189	.124	.246		.184	
Q6c	.742	.189	1	.367	.127		.096	
Q9d	.767	.124	.367	1	.188		.333	
Q11h	.554	.246	.127	.188	1		.123	
Q11p	.352	.184	.096	.333	.123		1	
Means for Meeting Obligations Social Capital	4.0064 (.99)	6.7188 (2.14)	4.6185 (2.31)	5.1308 (2.25)	2.6064 (.49)	1.4322 (.58)	4.7711 (3.39)	2.7671 (2.60)
Cronbach's Alpha	.508							
Cronbach's Alpha Based on Standardized Items	.660							

** transformed field due to skewness, kurtosis, and tests for normality

Table D.7

Category Inter-correlation Matrix for the Seven Social Capital Indices with Student Behavior

Indicator by Social Capital	Overall	Trust	Civic	Vol	Part	Giving	Meet Obs
Overall Social Capital	1	.813	.820	.678	.694	.667	.642
Civic	.813	1	.589	.490	.524	.509	.396
Trust	.820	.589	1	.512	.443	.404	.498
Volunteering	.678	.490	.512	1	.379	.406	.309
Giving	.694	.524	.443	.379	1	.411	.203
Participation	.667	.509	.404	.406	.411	1	.285
Meeting Obligations	.642	.396	.498	.309	.203	.285	1
Means	4.9634 (.95)	5.7528 (1.63)	6.6192 (1.55)	4.0892 (1.15)	6.7235 (1.75)	3.3022 (1.04)	4.0100 (.99)
Cronbach's Alpha	.862						
Cronbach's Alpha Based on Standardized Items	.879	0.8900					

** transformed field due to skewness, kurtosis, and tests for normality

Table D.8

Results of Correlations Between Overall Social Capital and the Enriching Educational Experience

	SoC	EEE_1	EEE_2	EEE_3	EEE_4	EEE_5	EEE_6	EEE_7	EEE_8
Social Capital Index									
Pearson Correlation	1	.248**	.296**	.336**	.196**	.142**	.185**	.085*	.145**
Practicum									
Pearson Correlation	.248**	1	.258**	.213**	.167**	.004	.091**	-.005	.130**
Volunteering									
Pearson Correlation	.296**	.258**	1	.213**	.139**	.073**	.151**	.045	.176**
Learning Community									
Pearson Correlation	.336**	.213**	.213**	1	.192**	-.011	.047	.060*	.076*
Research Project									
Pearson Correlation	.196**	.167**	.139**	.192**	1	.115**	.124**	.199**	.119**
Foreign Language									
Pearson Correlation	.142**	.004	.073**	-.011	.115**	1	.360**	.139**	.107**
Study Abroad									
Pearson Correlation	.185**	.091**	.151**	.047	.124**	.360**	1	.096**	.076*
Independent Study									
Pearson Correlation	.085*	-.005	.045	.060	.199**	.139**	.096*	1	.184**
Culminating Senior Experience									
Pearson Correlation	.145**	.130**	.176**	.076*	.119**	.107**	.076*	.184**	1

Appendix E Stepwise Regressions

Table E.1

Stepwise Regression Model Coefficients: Social Capital and Enriching Educational Experiences

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Learning	.341	.116	.115	.89761
L+Volunteer	.410	.168	.166	.87134
L+V+F+Internship	.432	.187	.183	.86224
L+V+Foreign Language	.451	.203	.198	.85425
L+V+F+I+Study Abroad	.459	.211	.204	.85098
L+V+F+I+SA+ Senior Experience	.465	.216	.209	.84862

Table E.2

Analysis of Variance Results for Specified Stepwise Regression Model (Social Capital)

Model		SS	df	MS	F	Sig.
L	Regression	64.407	1	64.407	79.939	.001*
	Residual	490.672	609	.806		
	Total	555.079	610			
L+V	Regression	93.466	2	46.733	61.553	.001*
	Residual	461.612	608	.759		
	Total	555.079	610			
L+V+I	Regression	103.802	3	34.601	46.540	.001*
	Residual	451.277	607	.743		
	Total	555.079	6310			
L+V+I+FL	Regression	112.853	4	28.213	38.662	.001*
	Residual	442.226	606	.730		
	Total	555.079	610			
L+V+I+FL+SAb	Regression	116.962	5	23.392	32.303	.001*
	Residual	438.117	605	.724		
	Total	555.079	610			
L+V+I+FL+Sab+SE	Regression	120.099	6	20.17	27.794	.001*
	Residual	434.979	604	.720		
	Total	555.079	610			

* $p < .01$

Table E.3

Stepwise Regression Model Coefficients (Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Learning	*B*	*SE B*	B		
Constant	4.777	.042		113.392	.001**
Lrncom	.743	.083	.341	8.941	.001**
L+Volunteer	*B*	*SE B*	B		
Constant	4.451	.067		66.765	.001**
Lrncom	.634	.083	.291	7.678	.001**
Volntr	.495	.080	.234	6.187	.001**
L+V+ Internship	*B*	*SE B*	B		
Constant	4.275	.081		52.657	.001**
Lrncom	.579	.083	.265	6.969	.001**
Volntr	.427	.081	.202	5.260	.001**
Intern04t	.317	.085	.144	3.729	.001**
L+V+F+ Foreign Language	*B*	*SE B*	B		
Constant	4.144	.089		46.799	.001**
Lrncom	.582	.082	.267	7.079	.001**
Volntr	.404	.081	.191	5.009	.001**
Intern04t	.327	.084	.148	3.876	.001**
Forlng	.246	.070	.128	3.522	.001**
L+V+F+I+Study Abroad	*B*	*SE B*	B		
Constant	4.155	.088		47.039	.001**
Lrncom	.579	.082	.265	7.060	.001**
Volntr	.383	.081	.182	4.743	.001**
Intern04t	.314	.084	.142	3.724	.009**
Forlng	.183	.075	.095	2.455	014*
Stdabr	.206	.087	.093	2.382	.018*
L+V+F+I+SA+ Senior Experience	*B*	*SE B*	β		
Constant	4.004	.114		35.126	.001**
Lrncom	.574	.082	.263	7.019	.001**
Volntr	.362	.081	.171	4.450	.001**
Intern04t	.300	.084	.136	3.555	.001**
Forlng	.167	.075	.087	2.228	.026*
Stdabr	.205	.086	.093	2.370	018*

Snrx04t	.217	.104	.077	2.087	.037*

* $p < .05$ ** $p < .01$

Table E.4

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 2: Trust Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Learning	.280	.078	.077	1.47910
L+Internship	.327	.107	.104	1.45686
L+I+Senior Exp	.341	.116	.112	1.45033
L+i+SE+Study Ab	.353	.124	.119	1.44491

Table E.5

Analysis of Variance Results for Specified Stepwise Regression Model (Trust Social Capital)

Model		SS	df	MS	F	Sig.
L	Regression	124.513	1	124.513	56.914	.001*
	Residual	1465.786	670	2.188		
	Total	1590.298	671			
L+I	Regression	170.381	2	85.191	40.138	.001*
	Residual	1419.917	669	2.122		
	Total	1590.298	671			
L+I+SE	Regression	185.186	3	61.729	29.346	.001*
	Residual	1405.112	668	2.103		
	Total	1590.298	671			
L+I+SE+SA	Regression	197.752	4	49.438	23.680	.001*
	Residual	1392.547	667	2.088		
	Total	1590.298	617			

* $p < .01$

Table E.6

Stepwise Regression Model Coefficients (Trust Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Learning	*B*	*SE B*	B		
Constant	6.372	.066		96.337	.001**
Lrncom	.986	.131	.280	7.544	.001**
L+Internship	*B*	*SE B*	B		
Constant	5.947	.112		52.894	.001**
Lrncom	.834	.132	.237	6.345	.001**
Internship	.615	.132	.174	4.649	.001**
L+I+Senior Exp	*B*	*SE B*	β		
Constant	5.590	.175		31.935	.001**
Lrncom	.834	.132	.237	6.345	.001**
Internship	.577	.133	.163	4.347	.001**
Senior Experience	.449	.169	.097	2.653	.008**
L+I+SE+Study Ab	*B*	*SE B*	β		
Constant	5.557	.175		31.774	.001**
Lrncom	.825	.131	.234	6.298	.001**
Internship	.553	.132	.156	4.173	.001**
Senior Experience	.420	.169	.091	2.486	.013**
Study Abroad	.321	.131	.090	2.453	.014*

* $p < .05$ ** $p < .01$

Table E.7

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 2: Civic Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Volunteer	.268	.072	.070	1.56927
V+Learning	.339	.115	.112	1.53324
V+L+Study Ab	.379	.144	.140	1.50915
V+L+SA+Internship	.400	.160	.155	1.49623
V+L+SA+I+ForeignL	.416	.173	.166	1.48588
V+L+SA+I+FL+Sr Exp	.426	.181	.174	1.47924
V+L+SA+I+FL+SE+Research	.434	.189	.180	1.47373

Table E.8

Analysis of Variance Results for Specified Stepwise Regression Model (Trust Social Capital)

Model		SS	df	MS	F	Sig.
V	Regression	126.712	1	126.712	51.454	.001*
	Residual	1642.564	667	2.463		
	Total	1769.277	688			
V+L	Regression	203.630	2	101.815	43.310	.001*
	Residual	1565.646	666	2.351		
	Total	1769.277	668			
V+L+SA	Regression	254.725	3	84.908	37.281	.001*
	Residuals	1514.552	665	2.278		
	Total	1769.277	668			
V+L+SA+I	Regression	282.768	4	70.692	31.577	.001*
	Residual	1486.508	664	2.239		
	Total	1769.277	668			
V+L+SA+I+FL	Regression	305.488	5	61.098	27.673	.001*
	Residual	1463.789	663	2.208		
	Total	1769.277	668			
V+L+SA+I+FL+SX	Regression	320.729	6	53.455	24.429	.001*
	Residual	1448.547	662	2.188		
	Total	1769.277	668			
V+L+SA+I+FL+SX+R	Regression	333.673	7	47.668	21.948	.001*
	Residual	1435.604	661	2.172		
	Total	1769.277	668			

* $p < .01$

Table E.9

Stepwise Regression Model Coefficients (Civic Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Volunteer	*B*	*SE B*	B		
Constant	5.059	.114		44.553	.001**
Volunteer	.964	.134	.268	7.173	.001**
V+Learning	*B*	*SE B*	B		
Constant	4.972	.112		44.395	.001**
Volunteer	.800	.134	.222	5.956	.001**
Learning	.794	.139	.213	5.720	.001**
V+L+Study Abroad	*B*	*SE B*	B		
Constant	4.880	.112		43.611	.001**
Volunteer	.711	.134	.197	5.325	.001**
Learning Comm	.785	.137	.211	5.744	.001**
Study Abroad	.654	.138	.172	4.736	.006**
V+L+SA+Internship	*B*	*SE B*	B		
Constant	4.609	.135		34.161	.001**
Volunteer	.606	.136	.168	4.467	.001**
Learning Comm	.704	.137	.189	5.126	.001**
Study Abroad	.628	.137	.165	4.584	.001**
Internship	.498	.141	.133	3.539	.001**
L+I+SA+I+Study Abroad	*B*	*SE B*	β		
Constant	4.423	.146		30.310	.001**
Volunteer	.590	.135	.164	4.373	.001**
Learning Comm	.710	.136	.191	5.201	.001**
Study Abroad	.463	.146	.122	3.179	.002**
Internship	.512	.140	.136	3.661	.001**
Foreign Language	.399	.124	.122	3.208	.001**
L+I+SA+I+FL+Senior Exp	*B*	*SE B*	B		
Constant	4.381	.146		29.985	.001**
Volunteer	.575	.134	.160	4.280	.001**

Learning Comm	.651	.138	.175	4.733	.001**
Study Abroad	.437	.145	.115	3.012	.003**
Internship	.471	.140	.125	3.361	.001**
Foreign Language	.343	.124	.105	2.759	.006**
ResearchwFaculty	.326	.123	.096	2.639	.009**
L+I+SA+I+FL+Senior Exp	*B*	*SE B*	B		
Constant	4.084	.190		21.513	.001**
Volunteer	.534	.135	.148	3.960	.001**
Learning Comm	.644	.137	.173	4.696	.001**
Study Abroad	.435	.145	.114	3.005	.003**
Internship	.445	.140	.119	3.185	.002**
Foreign Language	.343	.124	.105	2.759	.006**
Senior Experience	.302	.123	.089	2.449	.015*
Research	.428	.175	.088	2.441	.015*

* $p < .05$ ** $p < .01$

Table E.10

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 2: Volunteer Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Learning Comm	.306	.094	.092	1.10584
L+Internship	.371	.137	.135	1.07958
L+I+ Research	.403	.162	.159	1.06468
L+I+R+Volunteer	.427	.182	.177	1.05271
L+I+R+V+Senior Experience	.434	.188	.182	1.04980

Table E.11

Analysis of Variance Results for Specified Stepwise Regression Model (Volunteer Social Capital)

Model		SS	df	MS	F	Sig.
L	Regression	83.260	1	83.260	68.084	.001*
	Residual	805.886	659	1.223		
	Total	889.145	660			
L+I	Regression	122.250	2	61.125	52.446	.001*
	Residual	766.895	658	1.165		
	Total	889.145	660			
L+I+R	Regression	144.406	3	48.135	42.465	.001*
	Residual	744.739	657	1.134		
	Total	889.145	660			
L+I+R+V	Regression	162.161	4	40.540	36.582	.001*
	Residual	726.985	656	1.108		
	Total	889.145	660			
L+I+ R+V +SE	Regression	167.280	5	33.456	30.357	.001*
	Residual	721.866	655	1.102		
	Total	889.145	660			

* $p < .01$

Table E.12

Stepwise Regression Model Coefficients (Volunteer Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Learning	*B*	*SE B*	β		
Constant	3.890	.050		77.937	.001**
Learning	.812	.098	.306	8.251	.001**
L+Intership	*B*	*SE B*	β		
Constant	3.487	.085		41.030	.020*
Learning Comm	.684	.099	.258	6.940	.001**
Internship	.578	.100	.215	5.784	.001**
L+I+Study Abroad	*B*	*SE B*	B		
Constant	3.407	.086		39.728	.001**
Learning Comm	.612	.099	.231	6.211	.001**
Internship	.518	.100	.193	5.209	.001**
Research	.391	.088	.163	4.421	.001**
L+I+V+Research	*B*	*SE B*	β		
Constant	3.219	.097		33.223	.001**
Learning Comm	.553	.099	.208	5.611	.001**
Internship	.439	.100	.163	4.372	.001**
Research	.364	.088	.151	4.151	.001**
Volunteer	.381	.095	.148	4.003	.001**
L+I+V+R+Senior Experience	*B*	*SE B*	β		
Constant	3.022	.133		22.749	.001**
Learning Comm	.549	.098	.207	5.586	.001**
Internship	.424	.100	.157	4.221	.001**
Research	.347	.088	.144	3.958	.001**
Volunteer	.354	.096	.138	3.701	.001**
Senior Experience	.269	.125	.078	2.155	.032*

* $p < .05$ ** $p < .01$

Table E.13

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 2: Participation Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Volunteering	.292	.085	.084	.99988
V+Learning Comm	.359	.129	.126	.97651
V+ L+Research	.378	.143	.138	.96993
V+ L+R+Study Abroad	.378	.143	.138	.96993

Table E.14

Analysis of Variance Results for Specified Stepwise Regression Model (Participation Social Capital)

Model		SS	df	MS	F	Sig.
V	Regression	62.242	1	62.242	62.256	.001*
	Residual	666.846	667	1.000		
	Total	729.088	668			
V+L	Regression	94.011	2	47.005	49.294	.001*
	Residual	635.077	666	.954		
	Total	729.088	668			
V+L+R	Regression	100.259	3	33.420	35.342	.001*
	Residual	628.829	665	.946		
	Total	729.088	668			
V+L+R+SA	Regression	104.418	4	26.105	27.748	.001*
	Residual	624.670	664	.941		
	Total	729.088	668			

* $p < .01$

Table E.15

Stepwise Regression Model Coefficients (Participation Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
Volunteering	B	SE B	β		
Constant	2.826	.072		39.057	.001**
Volunteering	.675	.086	.292	7.890	.001**
V+Learning Comm	B	SE B	β		
Constant	2.770	.071		38.833	.001**
Volunteering	.570	.086	.247	6.666	.001**
Learning Comm	.510	.088	.214	5.772	.001**
V+L+Research	B	SE B	β		
Constant	2.718	.074		36.846	.001**
Volunteering	.551	.086	.239	6.449	.001**
Learning Comm	.468	.090	.196	5.228	.001**
Research	.205	.080	.095	2.570	.010*
V+L+R+SA	B	SE B	β		
Constant	2.698	.074		36.356	.001**
Volunteering	.526	.086	.228	6.112	.001**
Learning Comm	.467	.089	.196	5.231	.001**
Research	.186	.080	.086	2.322	.021*
Study Abroad	.188	.089	.077	2.103	.036*

* $p < .05$ ** $p < .01$

Table E.16

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 2: Giving Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Foreign Language	.272	.074	.073	1.66764
F+Volunteering	.354	.125	.122	1.62246
F+V+Learning Community	.376	.142	.138	1.60830
F+V+L+Research	.391	.153	.148	1.59879
F+V+L+R+Study Abroad	.402	.162	.156	1.59154

Table E.17

Analysis of Variance Results for Specified Stepwise Regression Model (Giving Social Capital)

Model		SS	df	MS	F	Sig.
F	Regression	149.901	1	149.901	53.901	.001*
	Residual	1868.856	672	2.781		
	Total	2018.757	640			
F+V	Regression	252.425	2	126.212	47.946	.001*
	Residual	1766.332	671	2.632		
	Total	2018.757	673			
F+V+L	Regression	285.723	3	95.241	36.821	.001*
	Residual	1733.034	670	2.587		
	Total	2018.757	673			
F+V+L+R	Regression	308.698	4	77.175	30.192	.001*
	Residual	1710.059	669	2.556		
	Total	2018.757	673			
F+V+L+R+SA	Regression	326.709	5	65.342	25.796	.001*
	Residual	1692.048	668	2.533		
	Total	2018.757	673			

* $p < .01$

Table E.18

Stepwise Regression Model Coefficients (Giving Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Foreign Language	*B*	*SE B*	β		
Constant	6.190	.097		63.649	.001**
Foreign Language	.951	.130	.272	7.342	.001**
F+Volunteer	*B*	*SE B*	β		
Constant	5.615	.132		42.496	.001**
Foreign Language	.884	.126	.253	6.986	.001**
Volunteer	.863	.138	.226	6.241	.001**
F+V+L	*B*	*SE B*	β		
Constant	5.557	.132		42.106	.001**
Foreign Language	.882	.125	.253	7.036	.001**
Volunteer	.759	.140	.199	5.415	.001**
Learning Comm	.521	.145	.131	3.588	.001**
F+V+L+R	*B*	*SE B*	β		
Constant	5.483	.134		41.067	.001**
Foreign Language	.836	.126	.240	6.661	.001**
Volunteer	.725	.140	.190	5.183	.001**
Learning Comm	.445	.147	.112	3.033	.003*
Research	.396	.132	.110	2.998	.003*
F+V+L+R+Study Abroad	*B*	*SE B*	β		
Constant	5.494	.133		41.320	.001**
Foreign Language	.713	.133	.204	5.348	.001**
Volunteer	.681	.140	.178	4.856	.001**
Learning Comm	.439	.146	.111	3.008	.003*
Research	.369	.132	.103	2.798	.005*
Study Abroad	.415	.156	.103	2.666	.008*

* $p < .05$ ** $p < .01$

Table E.19

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 2: Friends, Family, Meeting Obligations Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Learning	.208	.043	.042	.96906
L+Volunteer	.222	.049	.046	.96677

Table E.20

Analysis of Variance Results for Specified Stepwise Regression Model (Friends, Family, Meeting Obligations Social Capital)

Model		SS	df	MS	F	Sig.
L	Regression	27.954	1	27.954	29.767	.001*
	Residual	617.917	658	.939		
	Total	645.871	659			
L+I	Regression	31.806	2	15.903	17.015	.001*
	Residual	614.065	657	.935		
	Total	645.871	659			

* $p < .01$

Table E.21

Stepwise Regression Model Coefficients (Friends, Family, Meeting Obligations Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Learning	*B*	*SE B*	B		
Constant	-.063	.042		-1.481	.139
Lrncom	.418	.085	.193	4.934	.001*
L+Volunteering	*B*	*SE B*	B		
Constant	-.177	.069		-2.580	.001*
Lrncom	.381	.086	.176	4.429	.001*
Volunteering	.174	.082	.084	2.114	.035*

* $p < .01$

Table E.22

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 3 Student Characteristics: Fraternity or Sorority Membership and Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Learning Comm	.341	.116	.115	.89761
L+Volunteer	.410	.168	.166	.87134
L+V+ Internship	.432	.187	.183	.86224
L+V+I+Foreign Language	.451	.203	.198	.85425
V+L+I+FL+Fraternity Mem	.464	.215	.209	.84860
V+L+I+FL+FM+Study Abroad	.471	.222	.214	.84554
V+L+ I+FL+FM+SA+Senior Experience	.477	.227	.218	.84344

Table E.23

Analysis of Variance Results for Specified Stepwise Regression Model (Fraternity Membership and Social Capital)

Model		SS	df	MS	F	Sig.
L	Regression	64.407	1	64.407	79.939	.001*
	Residual	490.672	609	.806		
	Total	555.079	610			
L+V	Regression	93.466	2	46.733	61.553	.001*
	Residual	461.612	608	.759		
	Total	555.079	610			
L+V+I	Regression	103.802	3	34.601	46.540	.001*
	Residual	451.277	607	.743		
	Total	555.079	610			
L+V+I+FL	Regression	112.853	4	28.213	38.662	.001*
	Residual	442.226	606	.730		
	Total	555.079	610			
L+V+FL+I+FM	Regression	119.406	5	23.881	33.163	.001*
	Residual	435.672	605	.720		
	Total	555.079	610			
L+V+FL+I+FM+SA	Regression	123.253	6	20.542	28.733	.001*
	Residual	428.972	603	.711		
	Total	555.079	610			
L+V+FL+I+FM+SA+SX	Regression	126.106	7	18.015	25.324	.001*
	Residual	428.972	603	.711		
	Total	555.079	610			

* $p < .01$

Table E.24

Stepwise Regression Model Coefficients (Fraternity or Sorority Membership and Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Learning Comm	*B*	*SE B*	B		
Constant	4.777	.042		113.392	.001**
Learning Comm	.743	.083	.341	8.941	.001**
L+Volunteering	*B*	*SE B*	β		
Constant	4.451	.067		66.765	.001**
Learning Comm	.634	.083	.291	7.678	.001**
Volunteering	.495	.080	.234	6.187	.001**
L+V+Foreign Lang	*B*	*SE B*	β		
Constant	4.275	.081		52.657	.001**
Learning Comm	.579	.083	.265	6.969	.001**
Volunteering	.427	.081	.202	5.260	.001**
Internship	.317	.085	.144	3.729	.001**
L+V+FL+Internship	*B*	*SE B*	B		
Constant	4.144	.089		46.799	.001**
Learning Comm	.582	.082	.267	7.079	.001**
Volunteering	.404	.081	.191	5.009	.001**
Internship	.327	.084	.148	3.876	.001**
Foreign Language	.246	.070	.128	3.522	.001**
L+V+FL+I+Fraternity or Sorority Membership	*B*	*SE B*	β		
Constant	4.137	.088		-7.573	.001**
Learning Comm	.557	.082	.255	6.776	.001**
Volunteering	.362	.081	.171	4.446	.001**
Internship	.334	.084	.151	3.984	.001**
Foreign Language	.247	.069	.128	3.553	.001**
Frat/Soro Member	.331	.110	.111	3.017	.004**
L+V+FL+I+FM+Study Abroad	*B*	*SE B*	β		

Constant	4.147	.088		47.237	.001**
Learning Comm	.554	.082	.254	6.763	.001**
Volunteering	.343	.081	.162	4.204	.001**
Internship	.321	.084	.145	3.834	.001**
Foreign Language	.186	.074	.097	2.505	.012*
Frat/Soro Member	.325	.109	.109	2.966	.003**
Study Abroad	.200	.086	.090	2.320	.021*

* $p < .05$ ** $p < .01$

Table E.25

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 3 Student Characteristics: Student Athlete and Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Learning Comm	.341	.117	.115	.89809
L+Volunteer	.410	.168	.160	.87205
L+V+ Internship	.433	.187	.183	.86292
L+V+I+ Foreign Language	.451	.203	.198	.85495
V+L+I+FL+Study Ab	.459	.211	.204	.85168
V+L+I+FL+SA+Senior Exp	.465	.216	.209	.84932

Table E.26

Analysis of Variance Results for Specified Stepwise Regression Model (Student Athlete and Social Capital)

Model		SS	df	MS	F	Sig.
L	Regression	64.688	1	64.688	80.203	.001*
	Residual	490.390	608	.807		
	Total	555.078	609			
L+V	Regression	93.475	2	46.737	61.459	.001*
	Residual	461.603	607	.760		
	Total	555.078	609			
L+V+I	Regression	103.834	3	34.611	46.481	.001*
	Residual	451.244	606	.745		
	Total	555.078	609			
L+V+I+FL	Regression	112.856	4	28.214	38.599	.001*
	Residual	442.222	605	.731		
	Total	555.078	609			
L+V+I+FL+SA	Regression	116.965	5	23.393	32.250	.001*
	Residual	438.113	604	.725		
	Total	555.078	609			
L+V+I+FL+SA+SE	Regression	120.110	6	20.018	27.752	.001*
	Residual	434.968	603	.721		
	Total	555.078	609			

* $p < .01$

Table E.27

Stepwise Regression Model Coefficients (Student Athlete and Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Learning Comm	*B*	*SE B*	β		
Constant	4.777	.042		113.332	.001**
Learning Comm	.746	.083	.341	8.923	.001**
L+Volunteering	*B*	*SE B*	β		
Constant	4.452	.067		66.581	.001**
Learning Comm	.635	.083	.290	7.654	.001**
Volunteering	.494	.080	.233	6.153	.001**
L+V+Internship	*B*	*SE B*	β		
Constant	4.275	.081		52.588	.001**
Learning Comm	.580	.083	.265	6.958	.001**
Volunteering	.426	.082	.201	5.219	.001**
Internship	.318	.085	.144	3.730	.001**
L+V+FL+I+For Lang	*B*	*SE B*	β		
Constant	4.145	.089		46.707	.001**
Learning Comm	.583	.083	.267	7.057	.001**
Volunteering	.404	.081	.191	4.982	.001**
Internship	.327	.084	.148	3.874	.001**
Foreign Language	.246	.070	.128	3.513	.001**
L+V+I+FL+Study Abroad	*B*	*SE B*	B		
Constant	4.155	.089		46.947	.001**
Learning Comm	.579	.082	.265	7.038	.001**
Volunteering	.383	.081	.181	4.718	.001**
Internship	.314	.084	.142	3.722	.001**
Foreign Language	.183	.075	.095	2.449	.015*
Study Abroad	.206	.087	.093	2.380	.018*
L+V+FL+I+FM+SAb+ Senior Experience	*B*	*SE B*	β		
Constant	4.004	.114		35.092	.001**
Learning Comm	.575	.082	.263	7.002	.001**

Volunteering	.361	.082	.171	4.420	.001**
Internship	.300	.084	.136	3.554	.001**
Foreign Language	.166	.075	.086	2.220	.027*
Study Abroad	.205	.086	.093	2.368	.018*
Senior Experience	.217	.104	.077	2.088	.037*

* $p < .05$ ** $p < .01$

Table E.28

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 3 Student Characteristics: Father's Education and Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Learning Comm	.340	.115	.114	.89953
L+Volunteer	.411	.169	.166	.87257
L+V+Father's Education	.443	.196	.192	.85899
L+V+FE+Study Abroad	.467	.218	.213	.84805
L+V+FE+SAb+Internship	.485	.235	.228	.83943
L+V+FE+SAb+I+Research	.492	.242	.234	.83637
L+V+FE+SA+I+FL+Senior Exp	.497	.247	.238	.83395

Table E.29

Analysis of Variance Results for Specified Stepwise Regression Model (Father's Education and Social Capital)

Model		SS	df	MS	F	Sig.
L	Regression	63.487	1	63.487	78.462	.001*
	Residual	486.300	601	.809		
	Total	549.787	602			
L+V	Regression	92.965	2	46.485	61.051	.001*
	Residual	456.822	600	.761		
	Total	549.787	602			
L+V+FE	Regression	107.808	3	35.936	48.703	.001*
	Residual	441.979	599	.738		
	Total	549.787	602			
L+V+FE+SA	Regression	119.716	4	29.929	41.615	.001*
	Residual	430.071	598	.719		
	Total	549.787	602			
L+V+FE+SA + I	Regression	129.115	5	25.823	36.647	.001*
	Residual	420.672	597	.705		
	Total	549.787	602			
L+V+FE+SA+I+R	Regression	132.880	6	22.147	31.660	.001*
	Residual	416.907	596	.700		
	Total	549.787	602			
L+V+FE+SA+I+R+SExp	Regression	135.979	7	19.426	27.931	.001*
	Residual	413.808	595	.695		
	Total	549.787	602			

* $p < .01$

Table E.30

Stepwise Regression Model Coefficients (Father's Education and Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Learning Comm	*B*	*SE B*	B		
Constant	4.775	.043		112.223	.001**
Learning Comm	.741	.084	.340	8.858	.001**
L+Volunteering	*B*	*SE B*	B		
Constant	4.447	.067		66.401	.001**
Learning Comm	.629	.083	.289	7.575	.001**
Volunteering	.501	.080	.237	6.222	.001**
L+V+Father's Educ	*B*	*SE B*	B		
Constant	4.800	.103		46.702	.001**
Learning Comm	.614	.082	.282	7.498	.001**
Volunteering	.481	.079	.228	6.064	.001**
Father's Education	-.089	.020	-.165	-4.485	.001**
L+V+FE+Study Abroad	*B*	*SE B*	β		
Constant	4.776	.102		46.992	.001**
Learning Comm	.606	.081	.278	7.490	.001**
Volunteering	.433	.079	.205	5.468	.001**
Father's Education	-.095	.020	-.176	-4.827	.001**
Study Abroad	.330	.081	.149	4.069	.001**
L+V+FE+SA+ Internship	*B*	*SE B*	B		
Constant	4.609	.111		41.706	.001**
Learning Comm	.553	.081	.254	6.796	.001**
Volunteering	.371	.080	.176	4.631	.001**
Father's Education	-.096	.019	-.176	-4.916	.001**
Study Abroad	.316	.080	.143	3.927	.001**
Internship	.305	.083	.138	3.652	.001**
L+V+FE+SA+ I+R	*B*	*SE B*	β		
Constant	4.583	.111		41.400	.001**
Learning Comm	.523	.082	.240	6.376	.001**
Volunteering	.364	.080	.173	4.556	.001**
Father's Education	-.096	.019	-.176	-4.916	.001**
Study Abroad	.295	.081	.134	3.668	.001**
Internship	.282	.084	.127	3.363	.001**

Research	.171	.074	.086	2.320	.021*
L+V+FE+SA+ I+FL+Senior Exp	*B*	*SE B*	B		
Constant	4.431	.132		33.619	.001**
Learning Comm	.521	.082	.239	6.374	.001**
Volunteering	.340	.081	.161	4.229	.001**
Father's Education	-.097	.019	-.179	-5.05	.001**
Study Abroad	.290	.080	.131	3.605	.001**
Internship	.271	.080	.131	3.605	.001*
Foreign Language	.160	.075	.086	2.149	.001*
Research	.158	.074	.079	2.143	.033*
Senior Experience	.218	.103	.074	2.111	.035*

* $p < .05$ ** $p < .01$

Table E.31

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 3 Gender and Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Learning Comm	.341	.116	.115	.89761
L+Volunteer	.410	.168	.166	.87134
L+V+Internship	.432	.187	.183	.86224
L+V+I+Foreign Language	.451	.203	.198	.85425
V+L+FL+I+Study Ab	.459	.211	.204	.85098
V+L+FL+I+SA+Senior Exp	.465	.216	.209	.84862

Table E.32

Analysis of Variance Results for Specified Stepwise Regression Model Gender and Social Capital)

Model		SS	df	MS	F	Sig.
L	Regression	64.407	1	64.407	79.939	.001*
	Residual	490.672	609	.806		
	Total	555.079	610			
L+V	Regression	93.466	2	46.733	61.553	.001*
	Residual	461.612	608	.759		
	Total	555.079	610			
L+V+FL	Regression	103.802	3	34.601	46.540	.001*
	Residual	451.277	607	.743		
	Total	555.079	610			
L+V+FL+I	Regression	112.853	4	28.213	38.662	.001*
	Residual	442.226	606	.730		
	Total	555.079	610			
L+V+FL+I+SA	Regression	116.962	5	23.392	32.303	.001*
	Residual	438.117	605	.724		
	Total	555.079	610			
L+V+FL+I+SA+SE	Regression	120.099	6	20.017	27.794	.001*
	Residual	434.979	604	.720		
	Total	555.079	610			

* $p < .01$

Table E.33

Stepwise Regression Model Coefficients (Gender and Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
Learning Comm	*B*	*SE B*	β		
Constant	4.777	.420		113.392	.001**
Learning Comm	.743	.083	.341	8.941	.001**
L+Volunteering	*B*	*SE B*	β		
Constant	4.451	.067		66.765	.001**
Learning Comm	.634	.083	.291	7.678	.001**
Volunteering	.495	.080	.234	6.187	.001**
L+V+Foreign Lang	*B*	*SE B*	β		
Constant	4.275	.081		52.657	.001**
Learning Comm	.579	.083	.265	6.969	.001**
Volunteering	.427	.081	.202	5.260	.001**
Internship	.317	.085	.144	3.729	.001**
L+V+FL+Internship	*B*	*SE B*	β		
Constant	4.144	.089		46.799	.001**
Learning Comm	.582	.082	.267	7.079	.001**
Volunteering	.404	.081	.191	5.009	.001**
Internship	.327	.084	.148	3.876	.001**
Foreign Language	.246	.070	.128	3.522	.001**
L+V+FL+I+Fraternity or Sorority Membership	*B*	*SE B*	β		
Constant	4.155	.088		47.039	.001**
Learning Comm	.579	.082	.265	7.060	.001**
Volunteering	.383	.081	.182	4.743	.001**
Internship	.314	.084	.142	3.724	.001**
Foreign Language	.183	.075	.095	2.455	.014*
Study Abroad	.206	.087	.093	2.382	.018*
L+V+FL+I+FM+ Study Abroad	*B*	*SE B*	β		
Constant	4.004	.114		35.126	.001**
Learning Comm	.574	.082	.263	7.019	.001**
Volunteering	.362	.081	.171	4.450	.001**
Internship	.300	.084	.136	3.555	.001**
Foreign Language	.167	.075	.087	2.228	.026*
Study Abroad	.205	.086	.093	2.370	.018*

Senior Experience	.217	.104	.0747	2.087	.037*

* $p < .05$ ** $p < .01$

Table E.34

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 3 Self-Reported Grades and Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Learning Comm	.341	.116	.115	.89761
L+Volunteer	.410	.168	.166	.87134
L+V+Self-Reported Grades	.442	.196	.192	.85757
L+V+SRG+ Internship	.460	.211	.206	.84990
V+L+SRG+I+Foreign Language	.476	.227	.221	.84214
V+L+SRG+I+FL+Study Abroad	.482	.232	.225	.83988

Table E.35

Analysis of Variance Results for Specified Stepwise Regression Model (Self-Reported Grades and Social Capital)

Model		SS	Df	MS	F	Sig.
L	Regression	64.407	1	64.407	79.939	.001*
	Residual	490.672	609	.806		
	Total	555.079	610			
L+V	Regression	93.466	2	46.733	61.553	.001*
	Residual	461.612	608	.759		
	Total	555.079	610			
L+V+SRG	Regression	108.672	3	36.224	49.255	.001*
	Residual	446.407	607	.735		
	Total	555.079	610			
L+V+SRG+I	Regression	117.346	4	29.336	40.614	.001*
	Residual	437.733	606	.722		
	Total	555.079	610			
L+V+SRG+I+FL	Regression	126.014	5	25.203	35.537	.001*
	Residual	429.065	605	.709		
	Total	555.079	610			
L+V+SRG+I+FL	Regression	129.022	6	21.504	30.485	.001*
	Residual	426.057	604	.705		
	Total	555.079	610			

* $p < .01$

Table E.36

Stepwise Regression Model Coefficients (Self-Reported Grades and Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Learning Comm	*B*	*SE B*	B		
Constant	4.777	.042		113.392	.001**
Learning Comm	.743	.083	.341	8.941	.001**
L+Volunteering	*B*	*SE B*	B		
Constant	4.451	.067		66.765	.001**
Learning Comm	.634	.083	.291	7.678	.001**
Volunteering	.495	.080	.234	6.187	.001**
L+V+Self-Reported Grades	*B*	*SE B*	β		
Constant	3.852	.147		26.183	.001**
Learning Comm	.645	.081	.296	7.932	.001**
Volunteering	.471	.079	.223	5.976	.001**
Self-Reported Grades	.099	.022	.166	4.547	.001**
L+V+SRG+ Internship	*B*	*SE B*	B		
Constant	3.723	.151		24.727	.001**
Learning Comm	.594	.082	.272	7.244	.001**
Volunteering	.410	.080	.194	5.123	.001**
Self-Reported Grades	.094	.022	.157	4.330	.001**
Internship	.292	.084	.132	3.465	.001**
L+V+SRG+I+ Internship	*B*	*SE B*	β		
Constant	3.603	.153		23.537	.001**
Learning Comm	.597	.081	.274	7.353	.001**
Volunteering	.388	.080	.184	4.875	.001**
Self-Reported Grades	.093	.022	.155	4.308	.001**
Internship	.301	.083	.136	3.613	.001**
Foreign Language	.241	.069	.125	3.496	.001**
L+V+SRG+I+FL+ Study Abroad	*B*	*SE B*	B		
Constant	3.633	.153		23.689	.001**
Learning Comm	.593	.081	.272	7.325	.001**

Volunteering	.371	.080	.176	4.648	.001**
Self-Reported Grades	.089	.022	.149	4.135	.001**
Internship	.291	.083	.132	3.491	.001**
Foreign Language	.187	.074	.097	2.540	.011*
Study Abroad	.177	.086	.080	2.065	.039*

* $p < .05$ ** $p < .01$

Table E.37

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 3 Program of Study and Social Capital)

Model	*R*	R^2	Adjusted R^2	Std error of the Estimate
Learning Comm	.337	.113	.112	.89666
L+Volunteer	.409	.167	.164	.86981
L+V+Internship	.433	.187	.183	.86008
L+V+ I+Foreign Language	.452	.204	.199	.85176
V+L+I+FL+Study Abroad	.460	.211	.205	.84858
V+L+I+FL+SA+Senior Experience	.467	.218	.210	.84561

Table E.38

Analysis of Variance Results for Specified Stepwise Regression Model (Program of Study and Social Capital)

Model		SS	df	MS	F	Sig.
L	Regression	61.759	1	61.759	76.814	.001*
	Residual	482.402	600	.804		
	Total	544.161	601			
L+V	Regression	90.980	2	45.490	60.127	.001*
	Residual	453.181	599	.757		
	Total	544.161	601			
L+V+I	Regression	101.793	3	33.931	45.869	.001*
	Residual	442.368	598	.740		
	Total	544.161	601			
L+V+I+FL	Regression	111.043	4	27.761	38.265	.001*
	Residual	433.118	597	.725		
	Total	544.161	601			
L+V+I+FL+SE	Regression	114.990	5	22.998	31.938	.001*
	Residual	429.172	596	.720		
	Total	544.161	601			
L+V+I+FL+SE+SA	Regression	118.699	6	19.783	27.666	.001*
	Residual	425.462	595	.715		
	Total	544.161	601			

* $p < .01$

Table E.39

Stepwise Regression Model Coefficients (Program of Study and Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Learning Comm	*B*	*SE B*	β		
Constant	4.782	.042		112.760	.001**
Learning Comm	.733	.084	.337	8.764	.001**
L+Volunteering	*B*	*SE B*	β		
Constant	4.454	.067		66.524	.001**
Learning Comm	.623	.083	.286	7.507	.001**
Volunteering	.499	.080	.237	6.215	.001**
L+V+Foreign Lang	*B*	*SE B*	β		
Constant	4.275	.081		52.699	.001**
Learning Comm	.565	.083	.260	6.772	.001**
Volunteering	.429	.081	.204	5.267	.001**
Internship	.326	.085	.149	3.823	.001**
L+V+I+Foreign Language	*B*	*SE B*	B		
Constant	4.142	.089		46.793	.001**
Learning Comm	.572	.083	.263	6.917	.001**
Volunteering	.405	.081	.192	4.999	.001**
Internship	.335	.084	.153	3.965	.001**
Foreign Language	.251	.070	.131	3.571	.001**
L+V+I+FL+Study Abroad	*B*	*SE B*	β		
Constant	4.153	.088		47.026	.001**
Learning Comm	.568	.082	.261	6.896	.001**
Volunteering	.384	.081	.182	4.724	.001**
Internship	.322	.084	.147	3.822	.001**
Foreign Language	.188	.075	.098	2.510	.012*
Study Abroad	.204	.087	.092	2.341	.020*
L+V+I+FL+SAb +Senior Experience	B	SE B	β		

Constant	3.985	.115		34.680	.001**
Learning Comm	.564	.082	.259	6.873	.001**
Volunteering	.359	.082	.171	4.405	.001**
Internship	.305	.084	.139	3.620	.001**
Foreign Language	.172	.075	.090	2.292	.022*
Study Abroad	.203	.0887	.092	2.340	.020*
Senior Experience	.240	.105	.085	2.278	.023*

* $p < .05$ ** $p < .01$

Table E.40

Summary Statistics for Specified Stepwise Regression Model (Hypothesis 3 Race and Ethnicity)

Model	R	R^2	Adjusted R^2	Std error of the Estimate
Learning Comm	.341	.116	.115	.89761
L+Volunteer	.410	.168	.166	.87134
L+V+Internship	.432	.1857	.183	.86224
L+V+ I+Foreign Language	.451	.203	.198	.85425
V+L+I+FL+Study Abroad	.459	.211	.204	.85098
V+L+I+FL+SA+Senior Experience	.465	.216	.209	.84862

Table E.41

Analysis of Variance Results for Specified Stepwise Regression Model (Race and Ethnicity and Social Capital)

Model		SS	df	MS	F	Sig.
L	Regression	64.407	1	64.407	79.939	.001*
	Residual	490.672	609	.806		
	Total	555.079	610			
L+V	Regression	93.466	2	46.733	61.553	.001*
	Residual	461.612	608	.759		
	Total	555.079	610			
L+V+I	Regression	103.802	3	34.601	46.540	.001*
	Residual	451.277	607	.743		
	Total	555.079	610			
L+V+I+FL	Regression	112.853	4	28.213	38.662	.001*
	Residual	442.226	606	.730		
	Total	555.079	610			
L+V+I+FL+SE	Regression	116.962	5	23.392	32.303	.001*
	Residual	438.117	605	.724		
	Total	555.079	610			
L+V+I+FL+SE+SA	Regression	120.099	6	20.017	27.794	.001*
	Residual	434.979	604	.720		
	Total	555.079	610			

* $p < .01$

Table E.42

Stepwise Regression Model Coefficients (Race and Ethnicity and Social Capital)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Learning Comm	B	SE B	B		
Constant	4.777	.420		113.392	.001**
Learning Comm	.743	.083	.341	8.941	.001**
L+Volunteering	B	SE B	B		
Constant	4.451	.067		66.765	.001**
Learning Comm	.634	.083	.291	7.678	.001**
Volunteering	.495	.080	.234	6.187	.001**
L+V+Internship	B	SE B	β		
Constant	4.275	.081		52.657	.001**
Learning Comm	.579	.083	.265	6.969	.001**
Volunteering	.427	.081	.202	5.260	.001**
Internship	.317	.085	.144	3.729	.001**
L+V +Internship	B	SE B	B		
Constant	4.144	.089		46.799	.001**
Learning Comm	.582	.082	.267	7.079	.001**
Volunteering	.404	.081	.191	5.009	.001**
Internship	.327	.084	.148	3.876	.001**
Foreign Language	.246	.070	.128	3.522	.001**
L+V+I+FL+Stud y Abroad	B	SE B	β		
Constant	4.155	.088		47.039	.001**
Learning Comm	.579	.082	.265	7.060	.001**
Volunteering	.383	.081	.182	4.743	.001**
Internship	.314	.084	.142	3.724	.001**
Foreign Language	.183	.075	.095	2.455	.014*
Study Abroad	.206	.087	.093	2.382	.018*
L+V+FL+I+SE+ Study Abroad	B	SE B	β		
Constant	4.004	.114		35.126	.001**
Learning Comm	.574	.082	.263	7.019	.001**

Volunteering	.362	.081	.171	4.450	.001**
Internship	.300	.084	.136	3.555	.001**
Foreign Language	.167	.075	.087	2.228	.026*
Study Abroad	.205	.086	.093	2.370	.018*
Senior Experience	.213	.104	.077	2.087	.037*

* $p < .05$ ** $p < .01$